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ACUTE PYOGENIC INFECTIONS OF THE BONES AND JOINTS.*

WITH ILLUSTRATED CASES.

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Acute pyogenic infections of the bones and joints are not confined to childhood, but they are so much more common in youth that they may be regarded as typically disorders of the young.

Osteomyelitis, the outstanding example, may be acute, subácute, or chronic, according to the violence of its onset, or the stage at which it is encountered. The disease has an extensive literature. Its etiology, symptoms, diagnosis, and the indications for its treatment, have been so thoroughly formulated that it might appear that there was little to justify another paper on the subject were it not for the fact that the records of the hospital here (and I believe it would be found equally true anywhere else) indicate that prompt diagnosis, and immediate, adequate treatment are the exception rather than the rule. Iteration and reiteration, of perfectly established principles seems justified in connection with a disease so common, so fatal—or if not fatal, so crippling and prolonged in its course—if it can be shown that mistaken diagnosis is frequent in its early stages, and, in consequence, delay in treatment is usual at the very time when adequate treatment is of supreme importance. Any one who reviews the histories of a large series of cases of acute osteomyelitis will at once realize that such delay in diagnosis and in treatment is usual. This is my excuse for bringing before you a subject already so abundantly discussed by abler men and I may be pardoned for giving a brief synopsis of the main facts in connection with the disease.

Acute osteomyelitis is chiefly met with in childhood, especially in adolescent boys, who furnish almost three times as many victims as girls. It may, however, be seen in early childhood, and even in adults. The process is an acute infection of the medullary substance, the periostium, or both at once, deposited from the blood stream, and taken up into the blood as a rule from foci, such as a furuncle, situated at a distance from the infected bone. Typhoid, influenza, colon bacilli, streptococci, or staphylococci, may be the infectious agent, but in the great majority the disease is due to the staphylococcus. Sudden chilling of the body and slight trauma undoubtedly play a part in the etiology by lowering general and local resistance, and the greater liability to trauma, which is the inevitable result of the rougher sports of boyhood, may in part explain the disproportion in the number of males in any large series of cases.

As already stated, the disease usually begins in the medullary substance of the diaphysis near the epiphyseal line, but a sub-periosteal infection may be the pri-

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mary site, the process involving the deeper structure secondarily; in a certain number of cases it appears that sub-periosteal and medullary infection are simultaneous. The choice of the juxta-epiphyseal structures is due to the vascular distribution in bone.

Once the infection has been established, the dense envelope of bone, within which the infectious products are confined, causes tension. There is rapid extension of the process along the canaliculi and the medullary canal. The circulation of large areas of the bone is choked off, and extensive necrosis results. In the more fulminant cases, absorption of the poison results in a general septicaemia. The joint adjacent to the infected bone frequently becomes the site of an effusion, which may or may not be purulent. Occasionally a pyogenic inflammation of a joint may be complicated by an osteomyelitic infection, secondary to the joint trouble.

The onset of acute osteomyelitis is, as a rule, sudden, with pain distinctly localized in *the neighborhood of, but not actually in, the joint.* This pain is excruciating, and associated with exquisite local tenderness on pressure. It is said that percussion of the affected bone, even at a distance from the actual site of trouble, will bring out this pain and tenderness in a striking manner, and may be of value in diagnosis. Swelling of the limb generally develops rapidly, affecting the neighborhood of the joint rather than the articulation itself. But, as already noted, effusion in the joint is often present. A discriminating examination will, however, nearly always reveal that the greatest pain, tenderness, and swelling is in the proximity instead of in the articulation. An initial chill and rapid rise of temperature are characteristic of the acute cases; a somewhat milder onset may be seen in cases with milder infection. Decided leucocytosis is invariable; prostration, restlessness, delirium, profound toxemias correspond to the virulence of the infection.

Diagnosis is based upon the clinical picture drawn above. Mistaken or delayed diagnosis, with resultant widespread destruction of bone and prolonged disability, even though life itself is not sacrificed to the indecision of the attendant, appears to be chiefly due to a failure to appreciate the significance of the group of symptoms given above, or to a lack of self-confidence and courage to act before the collection of pus outside the bone—provided the patient survives that long—has become so obvious that it can no longer be disregarded. Along with this goes the failure to appreciate the vital importance, far greater in its urgency than the early operation in appendicitis, of minimizing the systemic poisoning, and limiting the spread of the infection *under tension* throughout the whole bone marrow which inevitably results in strangulation of the blood supply with consequent necrosis of the bone. It cannot be too strongly emphasized that in the crucial early days of acute osteomyelitis the x-ray picture is an utterly untrustworthy guide. When time enough has elapsed to read disease in the X-ray picture the patient has already survived the worst dangers to life, and extensive destruction of bone has already been established.

Acute rheumatism is a common preliminary diagnosis for which, in point of fact, there is not much excuse. Severe enough to simulate acute osteomyelitis, it is almost certainly poly-articular, and the trouble is unmistakably located in and not near the joints.

Acute pyogenic infection of the joints is frequently monarticular, presents the same excruciating pain and tenderness, a severe systemic infection, high fever, and leucocytosis, but the joint can nearly always be shown to be the chief seat of trouble. A really careful examination will show that the neighboring bone does not exhibit the extreme tenderness seen in osteomyelitis.

Typhoid fever is another false diagnosis too often made. Certainly there is little

resemblance between the mode of onset of the two diseases. Although it is true that typhoid fever may occasionally be the cause of an acute osteomyelitis, this does not occur in the beginning, and the early history of typhoid fever is not attended by violent pain and tenderness, with swelling, near the extremity of one of the long bones. If we are honest we must admit that it is difficult to find an excuse for such an error.

Inasmuch as this paper is not intended to be a complete dissertation on acute osteomyelitis, but simply a brief synopsis to emphasize certain features, I shall do no more than mention certain other disorders which must be borne in mind as possible sources of error, such as *acute synovitis*, the *haemorrhagic effusion of scurvy*, and the early stage of the *neuritic type of poliomyelitis*. Oschsner states that the differentation of certain cases of poliomyelitis, with high fever, mental excitement, and excessive pain and tenderness due to involvement of the peripheral nerves, may be very puzzling.

The prognosis is always grave. Death usually occurs during the acute stage, or is the result of delay in treatment. That it can be decidedly modified by early diagnosis and immediate treatment is beyond question. In a diffusion of a better knowledge of the significance of its symptomatology, and of the imperative importance of speedy intervention, lies the hope for a lowered mortality, and a reduction in the interminable duration of the average case.

The treatment should be immediate and courageous. Twenty-four hours may mean a great difference. In a few words it consists in permitting the escape of the inflammatory products of the disease before they have had time either to overwhelm the patient with septicaemia, or to destroy the vitality of the whole shaft of the bone. The only way to accomplish this is by cutting down upon the bone so as to expose it freely, making a liberal incision in the periosteum, and then opening the bone near the epiphysis by means of a drill, a trephine, or chisel and mallet. If pus is found beneath the periosteum, you may confidently expect that it will be present within the bone. Even though no pus is found under the periosteum, the bone should be opened, because pus may be actually present in the marrow, or its formation imminent. The removal of a part of the bony case relieves the tension within the bone, permits the escape of inflammatory products, and may arrest the progress of the disease, or at least so mitigate it that resolution may take place without any actual bone destruction; the long drawn out process of necrosis, and the necessity for secondary operations may be entirely avoided. I am well aware that a number of authorities have claimed that simple incision of the periosteum may be sufficient, as witness a recent report and discussion of a case of multiple osteomyelitis before the New York Academy of Medicine, but it seems to me the margin of possible error is too great; if pus has not formed in the marrow, a simple trephining can add little to the severity of the operation, whereas, in the presence of pus, failure to open the bone may be disastrous in its consequences.

Diagnosis in the very beginning, with immediate, adequate, and certain drainage, which implies opening the bone itself, appears to me to be the first and great commandment in the management of acute osteomyelitis. The details of subsequent management I shall not attempt to discuss at this time.

Acute pyogenic infections of the joints in the young is not as common as osteomyelitis, but pyarthrosis not due to a compound injury of the joint, but resulting from the transportation of the infectious material from distant foci, is no rare disorder. As a rule these frankly purulent cases are due to staphylococci. The hip and knee are the more commonly affected joints. The onset is sudden, stormy, with

high fever, and severe pain, tenderness, rapid swelling, and fixation of the affected joint. Leucocytosis is always present. The patient is obviously very sick. Redness may be quickly developed in the superficial joints, but at the hip it cannot be recognized. The same thing is true of swelling, but even at the hip the presence of effusion may be detected by careful examination. Pain and tenderness to pressure are very great, and this pain and tenderness is in the joint. Attempts to move the joint are resisted, and give agonizing pain. In the beginning the effusion in the joint may be serous, or only turbid, but in the type of case I am discussing the change to frank pus is not long delayed.

The diagnosis is made certain by aspirating and withdrawing some of the fluid from the joint. This is easier and more likely to be done in the knee than at the hip, but even in the latter a large bore needle passed backward, just below Poupart's ligament, midway between the femoral artery and the anterior superior spine of the ilium, will enter the hip joint. Aside from the diagnostic value of the procedure, aspiration is imperatively indicated in any distended joint to relieve tension, which is the chief cause of pain and of subsequent impairment of function.

In dealing with these cases the indications are much the same as in osteomyelitis. Agonizing pain, fixation of the joint in acute flexion, swelling, which is less apt to involve the periarticular structures than the joint itself, high fever, severe constitutional disturbance, with leucocytosis, particularly if the trouble is confined to a single articulation, ought not to be written down as rheumatism, or anything else which might excuse delay. The joint should be aspirated by means of a needle large enough to permit thick pus to pass. If pus is found an arthrotomy should be done at once. The procedure advocated by Wilhelms of opening the joint widely, leaving the wounds unsutured, except perhaps for a few stitches to fasten the synovial membrane to the skin to ensure the permanence of the stomata, followed by active motion to pump out the pus, seems to me the safest and surest road to recovery with good function. I cannot agree with Cotton that aspiration with copious irrigation with a weak soluton of bichloride of mercury ought to supersede the more radical procedure. There is no doubt that the prognosis is not as good at the hip as at the knee, but even there a life may be preserved which would have been sacrificed to more dilatory measures.

The points I have attempted to bring to your attention in this paper are illustrated by the case records briefly summarized below.

Not all of these cases were my own; some were in the service of other surgeons on the staff. Where the patient was under my care the fact is indicated in the case notes.

Case 1. Cyril P., age 7 years, white. Admitted on September 9, 1923, discharged on December 30, 1923.

History: Two weeks before his admission his right leg began to swell and became very painful. No history could be gotten of trauma, or of any infectious focus. His symptoms have been pain, tenderness, swelling of the leg, and fever. Examination reveals marked swelling of the right leg, extending from the knee to the foot. There is redness and local heat. Along the anterior surface of the tibia there is exquisite tenderness on even light palpation.

Skiagraphic report on September 10th (the following day): "Osteomyelitis lower end of right tibia."

Temperature ranged between 98.5 F. in the morning and 101 F. in the evening, for the next week.

Operation on September 17th (8 days after admission): "Osteotomy. Canal was opened with mallet and chisel. A lot of pus oozed out of the medullary canal. All diseased bone possible was removed. A large pack inserted."

Skiagraphic report on October 20th: "Osteitis distal end of diaphysis of tibia, with a large sequestrum on inner side of the diseased bone."

Second operation on November 9, 1923, "to remove the sequestrum, which was about an inch long. Bone was curetted and packed."

December 30, 1923: Patient discharged. He was walking about, but there was still a discharging sinus.

Comment: The too common delay in diagnosis and treatment is illustrated in this case. Two weeks elapsed between the onset of characteristic symptoms and admission to hospital. Even after a positive x-ray report had been received, a week was allowed to pass before drainage was established, and the infected medullary canal was opened. A secondary operation was necessary. It seems probable, since a discharging sinus was still present at the time he was discharged 4 months after the onset, that his trouble was not over.

Case 2. Penrod L., age 11 years. Admitted on July 28, 1923. Discharged on March 24, 1924.

History: Patient fell from the back of a truck striking upon his right side and thigh. He was unable to walk after the fall, and was taken to the hospital in the ambulance. Right thigh swollen and tender to touch, but there is no evidence of laceration of the tissues; no crepitus or abnormal mobility.

Radiographic reports: August 6, 1923, (8 days after admission). "No evidence of fracture of the femur." August 16th: "Lateral view of lower 3rd. right femur shows a tumor mass about 4½ inches long, by 1½ inches wide, posterior to, and in contact with lower third of femur. Probably an ossifying haematoma." August 29th: "A. P. & Lat. views of thigh show alteration of the diaphysis of femur, with marked periosteal reaction, and posterior to the bone a large sub-periosteal collection—blood or pus." September 8, 1923: "Osteomyelitis lower ½ diaphysis of femur, probably resulting from infection of the large haematoma." September 21, 1923: "Oblique view of both hips and pelvis shows infection of femur extending upwards; now 6 c. m. below lesser trochanter. Infectious arthritis of left hip." December 1, 1923: "A. P. & Lat. views of right femur show marked osteomyelitic changes throughout lower 2/3, with formation of a large sequestrum."

The records in this case are very imperfect, but the case notes indicate that during the early days of his stay in the hospital there was a pneumonia of the right lower lobe. The only blood count recorded was on August 10th, showing a leucocytosis of 15,150. The temperature ranged from date of admission, July 28th, to September 6th, around 103F., with morning remissions. After this it declined by lysis, with occasional peaks of 101 F. At some time between the date of his admission and December 3rd, either an incision or a rupture had permitted the discharge of pus from the inner side of the thigh.

On October 4, 1923, he was transferred to my service, but my absence from the city on vacation prevented my seeing him, and it was not till the beginning of December that my attention was called to him. On December 3, 1923, I operated, the operation sheet stating that the case was "an old necrosis of the femur. A sinus on inner side of the thigh was incised, the shaft of the femur exposed, and a large sequestrum removed. Counter opening on outer side, and two large cigarette drains passed through and through." Patient discharged on March 24, 1924, walking, but with a sinus still present.

Comment: For reasons not very clear in the history, this patient was allowed to go without operative interference for a very long time. The development of pneumonia during the early days no doubt had something to do with it, but it seems certain that localized pain and tenderness were present from the beginning, and should have led at least to exploratory puncture. Whether the discharging sinus was due to incision or to rupture is uncertain. I cannot assume entire responsibility for the long delay after his transfer to my service, because I was absent on vacation. The case is cited because it seems so clear that adequate treatment early in the attack would have greatly abbreviated the disability in this case.

Case 3. Clifton Archer, white, age 5 years, was admitted March 5, 1924, and discharged on April 20, 1924.

History: "The patient's mother first noticed that the child was complaining of pain in left knee and thigh 6 days before he was admitted. Pain and tenderness rapidly increased; temperature went up to 104 F. A local physician diagnosed "hip trouble" and advised his removal to hospital. There was no history of recent trauma.

Examination showed the left lower limb in acute flexion on the abdomen, with abduction and external rotation, and with flexed knee. Acute pain referred to hip and inner side of knee. Motion of hip extremely painful. Temperature 104 F. The next day, March 6th, blood count showed a leucocytosis of 17,500, with 3,500,000 erythrocytes. On March 7, at 9:30 a. m., I did an exploratory trephining of the neck of the femur. No pus was found, but the mater-

ial from the trephine opening was reported back on March 12th as indicating "acute exudative osteomyelitis." Buck's extension was applied as soon as the child returned from operating room. The next day the maximum temperature was 100 F., and thereafter ranged between 99 F. and an occasional rise to 103 F. till March 19th, when it became practically normal. The wound had healed, and on March 20th a spica was applied, and the child permitted to go home.

Comment: There is no record of an x-ray examination, and yet it seems certain that one must have been made. In the presence of acute pain, tenderness, high fever, and leucocytosis, an exploration of the bone was done promptly, and apparently with salutary effect upon the disease. Material from the trephine opening was reported to show "acute exudative osteomyelitis." Left to itself does it not seem probable that the process would have spread and produced wide destruction of tissue?

Case 4. Willie D., colored, age 8 years, was admitted to the hospital on August 24, 1924, and died on August 29, 1924.

History: "Patient says he struck his right knee on August 21st. Acute pain rapidly developed in his left leg, with high fever and delirium. He was very sick. By mistake he was sent to a medical ward, but was transferred to a surgical ward the next day, and the following morning, August 26th, operation was done. The history states that the 'right leg from the knee to the ankle presents a swollen, red appearance. Condition is critical, pulse weak and rapid (140), temperature 105 F.' An incision was made over the tibia and a small osteotomy done to relieve tension. On August 25th, the day before operation the x-ray report was that 'no pathology could be made out.' On this date there was a leucocytosis of 18,250. The patient did not react after the operation, but grew steadily worse. Every supporting measure was employed, but in vain. It was evident that septicaemia was present, and on August 29, 1924, the patient died."

Comment: Following a slight trauma the patient became rapidly acutely ill. A mistaken admission to a medical ward was promptly corrected, and adequate treatment, not neglecting the opening of the bone, was done within 30 hours. The skiagraph revealed no changes in the bone, although infection was there. The case illustrates the virulent type of infection.

Case 5. Geraldine Durger, white, female, age 3 years. Admitted September 11, 1925. Discharged September 27, 1925.

History: On Saturday, September 5, 1925, child fell from a chair and struck her right knee on the floor. Next day she developed acute pain in the right knee, with fever. She could not walk. She was treated by a physician, and advised to come to the hospital. Examination shows the right thigh near the knee somewhat swollen, painful, and very tender to pressure. The knee is held in flexion, but by very careful manipulation it can be moved. Temperature is 102 F. She was operated on by me as an emergency case the same day. The operation sheet states that "there is swelling and extreme tenderness over lower 3rd of right thigh. A muscle splitting incision on antero-lateral aspect gave a beautiful exposure of the bone; not a single artery clamp was needed. There was no pus beneath the periosteum, but a small opening was made in the bone, which bled a little more freely than would be expected. At first it looked as if there was no pus, but after a moment or two a small amount of pus welled up. The opening in the bone was enlarged, and a cigarette drain was inserted."

Skiagraph taken on September 15th, "shows no evidence of bone disease." On September 16th the pathologist reports "staphylococcus albus in pus submitted."

The patient was discharged to the clinic, on September 27th, with normal temperature, but with slight discharge still coming from the wound.

Comment: Six days elapsed between the acute onset and her admission to the hospital. The symptoms were characteristic, and should have been recognized earlier. Operation was done immediately, and the absence of pus beneath the periosteum did not deter me from opening the bone, where pus was found. X-ray absolutely negative.

Does it not appear certain that the mild course in this case was influenced by the prompt intervention? It is to be admitted that this was not a fulminant infection, but the amount of bone destruction would surely have been greater had we continued to temporize after her admission.

Case 6. Joseph Reed, white, age 2 years. Admitted February 23, 1926. Died February 28, 1926.

History: Duration of illness before admission not given. There was high fever, pain, tenderness and swelling of the leg. On February 25th incision with free opening of the periosteum over the crest of the tibia. No pus escaped. Wet dressings. February 26th, pus is now discharging. Temperature still very high. On the next morning, February 27th, the child is exceedingly ill. Under local anaesthesia the soft parts freely incised, and an opening made in the bone from which pus welled up. Skiagraph on February

24th revealed no bone changes; another on February 25th, and a third on February 26th, were entirely negative. Leucocytosis of 12,500. Respiration very rapid, pulse 150-160. Bronchopneumonia suspected. The operation gave no relief of symptoms, and death occurred the next day, February 28, 1926. The pus contained staphylococcus aureus.

Case 7. Doland Laurent, white, age 2 years. Admitted February 25, 1926. Died February 27, 1926.

History: Illness began on February 20th with pain and tenderness in right leg, with high fever. On admission very ill, with convulsions threatened.

Examination: Right leg shows an incision draining pus. There is severe pain, tenderness and swelling of the entire leg from knee to ankle. Evening of February 25th, 500 c.c. glucose and 5 units insulin by hypodermoclysis. February 26th patient was seen by me. Very weak and cyanotic. A rush x-ray picture was reported absolutely negative for bone changes. Free stimulation ordered. On February 27th, under local anaesthesia, the soft parts were freely incised, and the bone opened. Pus escaped from the bone under pressure.

Temperature in the evening of 25th was 105 F. On the morning of 27th it was 106 F. The infection was due to staphylococcus albus.

Comment: This was evidently a virulent infection. Drainage had already been established from the periosteum. Opening the bone on the morning of the 27th was not an example of temporizing in view of the fact that the case was only admitted in the afternoon of the 25th. However a week elapsed between the stormy onset with typical symptoms before adequate drainage of the bone was effected. Had the periosteum been freely incised and the bone opened during the beginning instead of at the end of a week, does it not seem probable that the fatal termination might have been averted?

CONCLUSIONS.

1. Both acute osteomyelitis and metastatic pyarthrosis are typically diseases of the young. The blood borne infection may be caused by typhoid, influenza, the streptococcus, but in the great majority it is due to either stapphylococcus aureus or albus.

2. Considering for the moment only acute osteomyelitis in its stage of onset and early evolution, the disease is generally abrupt and stormy in its attack, presenting a group of symptoms definite and significant enough to justify the recognition of the true nature of the disease much more promptly than is usually done.

3. The mortality is largely during the acute stage; or, if the patient survives the initial sepsis, extensive necrosis of bone, the necessity for repeated operations, and prolonged invalidism, are in direct proportion to the length of the delay in diagnosis and adequate treatment. Time is a factor of the utmost importance in the prognosis not only as to recovery, but as to the extent of bone destruction and the consequent duration of invalidism.

4. The records of hospitals all over the country indicate but too plainly that doctors are woefully timid in accepting the evidence of a developing osteomyelitis, and that they are not sufficiently impressed with the disastrous results of delay in dealing with the disease.

5. The X-ray picture is utterly useless at the beginning, and should be regarded as a mere confirmation, if bone changes are seen, of a diagnosis which should have been made long before this.

6. Localization of severe pain and tenderness, with swelling, near the end of a long bone, associated with fever, prostration, and leucocytosis, are almost pathognomonic of osteomyelitis. The fear of not finding pus either beneath the periosteum or in the bone should not deter us from intervention. Operation done at this time may save the patient's life, and arrest the spread of the infection before extensive bone destruction has become inevitable.

7. Bearing in mind the dangers of permitting virulent pus to remain locked up under tension within the bone, we should not be content with a simple incision of the periosteum, but should make certain of drainage by making an opening in the bone as well. Thus only can relief of intra-

ossecus tension of infectious matter be assured.

8. A campaign of education is needed to disseminate a better appreciation of the symptomatology, the urgent importance of prompt diagnosis, and the imperative necessity for immediate action to secure drainage not only of the soft parts, but of the bone as well.

DISCUSSION.

Dr. H. Theodore Simon: I think Dr. Fenner should be congratulated for his very excellent paper. I believe that he did not stress sufficiently the amount of crippling we do see, particularly where infection involving the epiphyseal cartilage causes, in later years, marked shortening of the limbs.

I am sorry Dr. Fenner did not bring before you again some of the successes he has had with the Wilhelms operation for joint infection. At the last clinical meeting the results he showed were most remarkable. It is not the case we get early, but the case operated with through and through drainage that gives us the most trouble. Let Dr. Fenner explain more particularly on the Wilhelms method of draining joints, for the benefit of the surgeons present. Through and through drainage gives anything from a complete ankylosis to any degree of limitation. A few words from Dr. Fenner on this subject would be very advantageous to the Society.

Dr. Isidore Cohn: Dr. Fenner has covered, in a most admirable way, all of the important points in regard to osteomyelitis. Particularly has he called attention to the importance or necessity for early diagnosis. We can congratulate Dr. Fenner for having presented this admirable paper and ourselves on having heard it.

We are apt to disagree, sometimes, on the little points. Dr. Fenner has mentioned the use of the chisel and mallet, along with the trephine or motor controlled drills, or even the simple device suggested some time ago by Dr. Maes—the gimlet, for the purpose of obtaining drainage.

The most frequent cause of death in fractures is fat embolism. The earliest pathological change in osteomyelitis is liquifaction of fat within the marrow. Trauma from the use of a chisel and mallet may cause fat embolism. The chisel and the mallet should not be used. Another thing Dr. Fenner called attention to was the use of the currette. I believe the time has come when we ought to put the currette in a glass case and mark it among the obsolete instruments. One of the things upon which we depend for regeneration of bone is endosteum; if we currette we tear away this regenerative factor. Last but not least, there is danger of injury to the nutrient vessel and if we get a hemorrhage from that we not only have hemorrhage, but death of a large amount of the bone through loss of its blood supply.

Dr. A. C. King: Any paper dealing with acute infection of the bones is always timely. Dr. Fenner has covered the ground quite well. I do not know that I can add anything to it. I think the discussion of a serious problem like acute bone infection is always necessary.

The greatest mistake we make in acute osteomyelitis is the lack of early diagnosis. Dr. Fenner has called attention to this and Dr. Cohn called attention to leaving the endosteum intact. We stand now where we did 25 years ago in relation to our ability to diagnose acute appendicitis. Almost anyone here can diagnose acute or chronic appendicitis because we keep certain symptoms in mind. We fail to do that in acute osteomyelitis. We fail to remember the blood borne diseases due to skin trauma, typhoid fever, etc.

Speaking of Dr. Maes,—I remember one of the post- graduate men related a case to me due to typhoid fever in a colored girl which he had accidentally been stopped to see 15 miles from the office. He diagnosed it as typhoid osteomyelitis, giving a little chloroform and using a carpenter's bit. Made a little incision, drilled a hole in the humerus, and the woman got well. It is not always necessary to do a big operation. Two or three drill holes made with an electric drill is all that is usually necessary. Too much drumming with chisel and mallet does damage.

In our service in the hospital we are confronted with long drawn out cases because early diagnosis is not made and they come in with a terrific amount of bone destruction, we keep them in the hospital for from 15 to 18 months and even then they often go out crippled. They go out with a drainage condition and we lose sight of them after leaving.

The reason for the tremendous sequestration which we take out from the long bone is very plain.

I am glad Dr. Cohn brought out the point about putting the currette in a glass case, particularly in the acute condition. Infection will do two things: (1) destroy endosteum, and (2) destroy periosteum. Destroy the blood supply and the bone will die, sure as fate. In operating it is usually not necessary to gutter the bone from one end to the other.

In the early case the pathological condition is this: the infection within the bony canal means that the products of this infection are put up within a closed canal with no way of escape except through the Haversian Canals, and when this occurs and we find pus sub-periostically the damage has been done. The pain in osteomyelitis is due to *tension within the bone* and is often terrific.

As Dr. Fenner has ably pointed out early diagnosis, and early operation are the indications. We are often blocked by objections on the part of parents, however in time this can be overcome, just as it has in advising operation for an acute appendix.

Dr. O. C. Cassegrain: It is very true, and everybody admits that if we take acute osteomyelitis in the early stages, the operation of cutting down to the bone and drilling one or two openings is all that is necessary. As Dr. Fenner has said, however, we are all confronted with the fact that the great majority of these cases come to us too late, when bone has already been destroyed, and at that stage simple incision and drilling is not sufficient.

In my clinic in the hospital the frequency of bone sinuses of long standing is appalling, and it is in the treatment of these late cases that I wish to sound a warning.

The mistake too often made is not removing enough bone. When the disease is well established we should go beyond the dead bone, well into the healthy bone. I do not believe you can ever remove too much healthy bone in these cases. If the proper methods were used we would not have these long standing sinuses. The thing to do is to remove all the dead bone and then remove as much of what you consider healthy bone as you have the nerve to do.

Dr. Urban Maes: Osteomyelitis has been a hobby of mine for the past 15 or 20 years, and 3 years ago I presented a paper on the subject before the State Medical Society.

During these years I have watched the disease rather closely, but in my experience with two hospitals I have yet to see a case of acute osteomyelitis; practically all of the patients seek relief after the damage has been done. In studying the subject with Dr. Rives 3 years ago, we found that three diagnoses covered nearly all cases, typhoid fever, tuberculosis, and intestinal upset.

The disease is a definite entity, it always occurs in certain spots, terminally in the long bones, and there is no reason why the general practitioner should not recognize it. We have succeeded in teaching our undergraduate students and our young practitioners and surgeons the classical signs of appendicitis, and I think the subject of acute infectious osteomyelitis should be presented to them as an equally important thing. If we could teach them early recognition of the disease we should undoubtedly save many lives. Moreover, the treatment is not complicated. Since the disease always occurs next to the epiphysis, two or more drill holes at the end of the bone give practically immediate relief, and prevent extensive necrosis.

As I have said, those of us who do hospital practice rarely if ever see acute osteomyelitis until the disease is so far advanced as to be almost chronic. In private practice the reverse is true, but in public institutions, extensive necrosis is the rule on admission, and permanent disability is not infrequently the result. The death rate, of course, is much higher than it would be if the cases were seen earlier.

Starr's rules for the management of these cases are as simple and as sensible as any I know. The treatment, as I have said, is by no means complicated, and some years ago I suggested the carpenter's gimlet as an excellent instrument for releasing the infection. Promptness in diagnosis and treatment should be emphasized, and I need hardly point out to you the importance of a strictly aseptic technique.

Dr. Fenner (closing): On the comment of Dr. Cohn: I never, willingly, open an osteomyelitic bone with the chisel,—I always use the Hudson drill or the trephine and, if necessary, gouge forceps, but, if I did not have a trephine or Hudson drill, I would open it with whatever was available. The thing I am trying to emphasize is "*the bone should be opened.*"

Only a week or two ago a German writer told us when to open the periosteum by claiming if pus was present in the medulla there would be oil globules in the urine. I will not wait for that,—it is too big a risk. One of the cases I was not able to recall was that of a little patient, 2 years of age. It was a thoroughly acute form, high fever. The trouble was around the hip. In the hip joint it is difficult to say if it is in or near the hip. I got the impression from my examination that the trouble was near the hip. I trephined the neck of the femur. That was within two days. I did not get any pus. Report on scrapings sent back "acute exudative osteomyelitis" and no destruction of bone or joint resulted. I had the courage to go in before the pus had formed.

I think the profession needs to have emphasized to them the necessity for prompt intervention. Prompt action in appendicitis was pounded in by

paper after paper until finally the profession was waked up. The same thing is needed in regard to osteomyelitis. We would not have the fatality, we would not see just the chronic osteomyelitis. The profession does not realize the fact that the symptoms of the disease are definite. It is as easily recognized as appendicitis. We should not wait three, four or five days. In one of the cases we made an incision to the periosteum. The child was very sick and I immediately had my intern incise freely down to the periosteum of the tibia. The child the next day was still sick. The following morning I took the temperature, and it was 106°. Gave a local anaesthetic, bored a hole in the bone and the pus poured out. The child died the next day. During that time three x-ray pictures were taken. The x-ray showed no signs of pus or periosteal disease. If I had had the time or courage to take the child and open up the bone instead of the periosteum the child might have been here today.

THE ENDOCRINES IN PATHOGENESIS AND THERAPY.*

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Since the endocrines are concerned in virtually all physiological processes, it need not cause surprise if it is asserted that a disturbance of the endocrine balance, through defective or excessive functioning of some one or more glands, must give rise to disease. I need refer only to such gross examples as myxedema, exophthalmic goiter, acromegaly, tetany, Addison's disease, dystrophia adiposogenitalis. Not all effects of dyscrinism are so spectacular, however, and many times slight deficiencies or exaltations of function may be concerned in affections that had never been suspected of endocrine associations. Levi and Rothschild have written a book (1913) on the minor thyroid deficiencies. Bandler's book on the endocrines contains numerous references to the subject, not only of thyroid, but other forms of dyscrinism.

*Read before the Sixth District Medical Society at its Annual Meeting, Baton Rouge, Louisiana, March 25, 1926.

Specialists of all branches have become interested. Physicians devoting exclusive or special attention to the diseases of eye, ear, nose, throat, skin, gastrointestinal, urogenital organs, teeth, etc., all have recognized endocrine links in the chain of events that bring ill health. We are familiar with the endocrine origin of the diseases mentioned already and acknowledge it in diabetes mellitus and insipidus, in dysmenorrhea, infantilism, in some forms of neurasthenia, that grab-bag of missed diagnoses. We readily admit that there is an essential endocrine factor in some forms of adiposity. There is an endocrine form of epilepsy; the toxemic phenomena of pregnancy are explained in like manner; migraine and some other forms of headache, hemophilia, etc., have often an endocrine association, as have gastric and duodenal ulcer, delayed union of fractures, varicose ulcers. In all the conditions named, and in numerous others, endocrine deficiency or excess looms large as *a* factor, though not *the* factor, and often the associated endocrine therapy brings clinical triumphs that no other form of treatment has been able to produce.

MANIFESTATIONS OF DYSCRINISM.

Some of the endocrine glands, as the adrenals and the parathyroids, are indispensable to life and their loss leads to death. Others have an important influence on growth and nutrition, and disturbances in them may lead to grave troubles.

The symptoms occasioned by affections of the endocrine glands consist mainly in trophic troubles, in disturbances of circulation, of metabolism and in nervous upset. The last involves especially the sympathetic nervous system. The trophic troubles involve most commonly the entire organism. One may find generalized conditions, such as dwarfism or gigantism. Besides, one may encounter special types of growth, such as the infantile type with large head and short extremities, persisting to adult age. The eunuchoid growth is, on the con-

trary, characterized by elongated limbs. In these diverse cases of abnormal growth, the X-ray may discover changes in the osseous system, for instance, premature or tardy closing of the epiphyses.

The epidermis, the form of the hair covering, the subcutaneous tissue may also present trophic changes. There may be excessive dryness or moistness of the skin, troubles of pigmentation, an edematous or a sclerous condition of the integument. One may also encounter deposits of fat giving to men a feminine appearance. The hair covering may undergo like transformations, especially that hair which grows at puberty (beard, hair in axillæ, pubic hair, and around the anus). One may observe a total loss of hair, or, on the contrary, a hypertrichosis. Atrophy of the genital organs is important.

Disturbances of metabolism effect mainly that of the fats and the minerals. Excessive emaciation or marked obesity are frequent symptoms in the diseases of the endocrine glands. The sugar metabolism is often disturbed; in that case, urinalysis after the ingestion of glucose is necessary to establish the differential diagnosis between glycosuria and pancreatic diabetes. The nitrogen and calcium metabolism may be modified; but is less easy to study.

With regard to the nervous system, it is especially the muscular force and the irritability that present alterations. To these there are added important symptoms of sympathetic nervous origin which manifest themselves in various ways—in changes in the diameter of the pupils, the appearance of the eye ball, the pulse rate, the arterial pressure, the external secretions (diuresis, sweat, etc.), and also in the intestinal peristalsis. These disturbances of the sympathetic nervous system are discovered with the aid of pharmacodynamics: The subcutaneous injections of remedies like pilocarpine, atropine, epinephrin, pituitrin, cause certain reactions in normal persons, which are modified when the patient is affected by an endocrine disease. Local examination is not possible except in a few of them; so the thyroid and the testes may be examined by inspection and palpation; the ovaries only by palpation. The condition of the pituitary may be determined by radiography, that of the thymus by the stethoscope. The adrenals are least of all accessible to direct examination.

In many instances, an affection of the endocrine glands may favor the outbreak of certain maladies, for instance some skin affections. In these cases, improvement often follows after suitable organotherapy. While it is important to keep this point in mind, one should avoid including, among the endocrine affections, every disease that may be improved by endocrine therapy.

HORMONES AND CONSTITUTION.

Pende (*"Konstitution und Innere Sekretion."* Leipzig, 1924, p. 7) speaks of "the undeniable effect of the hormones upon the mental development and upon the psychic equilibrium, especially the influence exerted on that psychic phase which determines conduct, the manifestations of inclinations, of emotions and the will, also temperament and character of the individual. He raises the question whether the morphological and the moral anomalies of criminals must be charged to their particular endocrine constitution. * * * He refers to the analogies existing between the hyperthyroid temperament and that of certain impulsive or sexual criminals; also the analogies between the dyspituitary temperament and that of certain apathetic, cynical, sanguine criminals; finally the analogies of the dysgenital temperament with the somatic-psychic anomalies of sexual criminals and prostitutes.

The influence exerted by the hormones upon the constitution is described by Julius Bauer, of Vienna (*Endocrinology*, May, 1924, viii, pp. 297, 322). He says that growth and bodily development are under the influence of the gonads, as is indicated by the variations from normal in those

whose gonads are either not functioning or have been removed before puberty. The thyroid and pituitary also are of influence and, further, the cells of the osseous system, especially those forming the epiphyseal part of it, possess a certain autochthonous automatism (l. c., p. 302). "The endocrine organs influence the growth," he says, "but they alone do not bring it about; without them we would observe a certain amount of growth, too. Normal growth is the product of co-operation of autochthonous growth of the skeleton cells with certain endocrine glands stimulating or checking it."

In this whole process of growth, partly due to constitutional peculiarities, heredity is of importance, the characteristics being localized potentially in the germ cells.

THE ENDOCRINES IN INFECTIOUS DISEASES.

There are very many instances in which *infection* seems to be an etiological factor in endocrine disease as such. We are all familiar with the causal connection between quinsy and hyperthyroidism, tonsillitis and thyroid disease, parotitis and orchitis or inflammation of the ovaries. Consequently, if an attack of scarlet fever at the age of four is followed by the syndrome of hypopituitarism (as reported by Theodore McGraw, *Endocrinology*, Mar., 1924, p. 210) the relation of cause and effect is readily suggested.

Such a relation is not surprising if it is kept in mind that the occurrence of infection at once sets in motion the immunizing apparatus of the organism and that the endocrines are intimately concerned in this. Indeed, Professor Sahli recently (*Schweiz. Med. Woch.*, Jan. 9, 1926, lvi, p. 1) has outlined a theory of immunity which he claims to be more correct than the Side-Chain Theory of Ehrlich and in which the endocrine products, the hormones, are immediately instrumental in producing antibodies against infectious organisms. We know that the mineral metabolism is one of the vital functions and that it is under the direction of those endocrine glands which are essential to life, namely the thyroid, the hypophysis, the parathyroids, the adrenals and, with them, the gonads. In addition, the thyroid especially is instrumental in bringing about the neutralization of the toxins that are formed in the destruction of bacteria and also in the disposal of dead tissue cells which, being foreign protein substances, exert a toxic influence unless disintegrated and removed from the body.

It is readily understood that, in this struggle against injurious substances of considerable potency, the endocrine glands may be injured and in extreme cases we then have serious endocrine disease. In less extreme involvement, there may follow an endocrine dysfunction which is amenable to restoration by suitable remedial measures. Grove and Vine, for instance, have shown that the parathyroids are often implicated seriously in infectious diseases, such as tuberculosis, and that a depreciation of their function will bring about a lessened calcium metabolism; the titer of the fixed blood calcium being diminished. When the parathyroids are injured, the blood is no longer able to fix the requisite amount of calcium. No matter how much calcium is introduced into the circulation, it is eliminated as fast as it is assimilated. When, however, the function of the parathyroids is restored, the blood can once more fix its lime and an amelioration in the condition of the patient will become noticeable. This favorable effect of remedies that improve the functioning power of the parathyroids has been demonstrated in tuberculosis, also in hemophilia, in some forms of epilepsy (*i. e.*, those that are secondary to focal infections or to intestinal intoxication, etc.) and in other conditions in which a disturbed calcium metabolism is of importance.

The thyroid also is concerned in tuberculosis, and the differential diagnosis between early tuberculosis and thyroid intox-

ication or even thyroid instability may be difficult. In tuberculosis as well as in thyroid disease, there may be a rapid pulse, fatigue on slight effort and even without effort, there may be digestive upset and various other manifestations of ill health that are not sufficiently characteristic to establish a diagnosis without careful observation.

In the treatment of infectious diseases, endocrine remedies have often been used with good results. For instance, Wagner v. Jauregg and Gustav Bayer (*"Lehrbuch der Organotherapie." Leipzig,* 1914, p. 237) say that because of the favorable influence on heart lesions and disturbances of blood-pressure, through pituitary preparations, these have been recommended in infectious diseases, especially in cases where toxic troubles had affected the heart. They insist that in infectious diseases treatment with hypophyseal extract is definitely indicated when severe intoxication of the heart is present. In such a case the low blood-pressure is raised, the pulse becomes slower and stronger, the action of the heart more vigorous. Because of the rapid action, these preparations are superior to digitalis, caffeine and camphor in these conditions.

During the epidemic of Spanish influenza in the winter of 1918-19 and in the next one, 1921, Sajous emphasized a particularly unfavorable effect of the infection upon the adrenal apparatus. He attributed the exceedingly slow convalescence and the frequency of recurrence to this fact and counteracted it successfully with adrenal therapy. Sajous' conclusions were adopted by many physicians with satisfactory results.

We have already mentioned the degree in which the parathyroids are implicated in tuberculosis as well as other infectious diseases. Many cases of thyroid irritation have been traced back to infections of the tonsils and to pyorrhea.

From all this, the indications for a deliberate endocrine therapy in patients affected with infectious diseases can readily be deduced.

THE ENDOCRINES IN OBESITY.

In these days of Sheiks and Shebas, the maintenance of a slender bodily shape is considered necessary and the appearance even of mild plumpness is viewed with alarm by the fair, with at least distaste by the men who object especially to aldermanic rotundities. *Obesity* or adiposity is not always a punishment for gluttony. In many cases it is pathological and is then directly associated with endocrine dysfunction; it is related to disturbances mainly of the thyroid, hypophysis and gonads, although Zondek incriminates also the pineal, the adrenal cortex, and the pancreas. Others speak of a thymus obesity. As far as these forms of obesity are concerned, we are dealing with a lowering of the basal metabolic rate which is normally regulated by the thyroid gland but in which the other endocrines are also interested. The endocrine kind of obesity can be recognized by the fact that the fat is deposited mainly on certain portions of the body while other parts show a normal fat distribution. We find the pituitary adiposity characterized by the large shoulder and hip-girdle fat, while forearms and hands, lower legs and ankles may be small and slender. The thyroid fat appears in the form of pads above the clavicles, also on the bloated face, in contrast to the small and animated facies of the pituitary obese. The gonad obesity shows the fat distributed all over. There are numerous other characteristics (condition of skin, heavy abdomen, mons veneris, in pituitary adiposity, *e. g.*), but endocrine obesity is an essentially endocrine disorder and, therefore, not strictly within the limitations of our present inquiry.

THE ENDOCRINE FACTOR IN ARTHRITIS.

For many years, Léopold Lévi (*"La Petite Insuffisance Thyroidienne,"* Paris, 1913) has asserted a hypothyroid factor in *arthritis.* This has actually been

found to exist in so far as arthritis occurs on the basis of an insufficiently active metabolism and intestinal toxins are deposited in joints and elsewhere, where they give rise to inflammation; but it does not put aside those forms of arthritis that are clearly of infectious origin. H. K. Thompson (*Boston Med. and Surg. Jour.*, Apr. 2, 1925) differentiates three classes of chronic arthritis, viz,

(a) Isotrophic, or undifferentiated;

(b) Atrophic;

(c) Hypertrophic.

"Cases of chronic arthritis of the isotrophic group represent the primary residua of infective foci. They may remain as such without bone changes, or may develop changes of the hypertrophic or possibly of the atrophic type, in which event a disordered endocrine system may be demonstrable either as the immediate causal agent or as a complementary phenomenon.

"The cases of the atrophic group offer some evidence of endocrine dysfunction. In many, features associated with hyper- or dysthyroidism are present, while, in a few, other endocrine foci seem more probable.

"Cases showing changes of the hypertrophic type present evidence of endocrine hypofunction, seemingly of the thyroid, with low metabolic rate, slow pulse, low blood-pressure and generally lowered tone. These are usually amenable to gland therapy."

G. A. Persson, of Mount Clemens, Mich. (*N. Y. Med. Jour.*, Sept. 19, 1923, cxviii, p. 363) elucidates the mechanism in an acceptable manner. He says:

"* * * focal infections of the alimentary tract are present in a large majority of arthritic cases. These infections are probably of long standing and represent a losing battle on the part of the system against the inroads of invading bacteria. This battle begins in infancy and turns toward defeat at that period of life when, owing to the strain of the exacting conditions under which we live, the toxins created by inimical bacteria accumulate to such a degree that they give rise to glandular unbalance. This occurs because the glandular secretions that stimulate the development of antibodies in the blood finally become insufficient for the performance of their functions, owing to the excessive demands upon them. Certain of the overloaded glands tend to exhibit alteration of physiological function and their secretory power becomes curtailed. That at once impairs the efficiency of the particular organs that are normally kept at par by the presence of these secretions carried to them by the bloodstream. This impairment weakens the resisting power of the organs concerned, which thus fall an easy prey to the inroads of bacteria that in turn tend to weaken them still further. A vicious circle is thus created working always for more and more unbalance in the interlocking system of glands that controls our vital processes and that presents a constantly diminishing check to the inroads of pathogenic bacteria. * * *"

According to A. Mackenzie Forbes, Clinical Professor of Orthopedic Surgery, McGill University, Montreal (*Can. Med. Assn. Jour.*, Dec., 1924, xiv, p. 1192), the blood calcium of a number of patients, in the Children's Memorial Hospital, Montreal, that were suffering from chronic arthritis, diminished in about 33 per cent. of severe cases of infective arthritis. He says: "The parathyroids govern calcium metabolism. Interference with the functional activity of these glands may increase the patient's susceptibility to the deleterious effects of toxins derived from the alimentary canal. What, may we ask, is the relation between injury to the parathyroid glands and some of the cases of infective arthritis? Is it possible that in some of these the initial lesion is in the parathyroid and that this opens a door of infection of the intestinal mucosa?"

NEUROSES, NEURASTHENIA, DEMENTIA PRAECOX.

According to A. E. Gow (*Brit. Med. Jour.*, Apr. 19, 1924, p. 697), it may be that many of the so-called functional diseases—that is, diseases in which no structural lesion is demonstrable with the means at our disposal—are due to disturbance of endocrine function. We are accustomed to speak of various *neuroses*, which term implies the idea of an underlying instability of the nervous system as the *fons et origo mali*. But is it the nervous system which is always primarily at fault? We are frequently called upon to treat "gastric neuroses"—cases of dyspepsia in which peptic ulcer, carcinoma, cholelithiasis, or chronic appendicitis can be certainly excluded. The outstanding symptom may be referable to disturbance in the motor, secretory, or sensory function. Vagotonia is associated with a high stomach, vigorous peristalsis, and hypersecretion; sympathicotonia with a low and often large viscus, delayed emptying and hyposecretion. Gastric neuroses present varying clinical pictures but in not a few of the hyperchlorhydric type evidence of vagotonia may be found if carefully looked for, whereas hypochlorhydria is not infrequently associated with thyroid deficiency, and such patients will derive benefit from small doses of thyroid extract given by the mouth.

Neurasthenia is not infrequently a sequel to an infective disease in which the suprarenal glands may have suffered damage with consequent lowering of function, or it may develop after a prolonged period of strain or anxiety which calls in the first place for increased production of adrenalin with subsequent adrenal exhaustion. The irritant effect of physical or mental trauma does not find expression in neurosis until endocrine exhaustion occurs—the obsessions, fears and anxieties gain the upper hand, overflowing the lowered threshold of control; or in another group the adrenal check on the thyroid is lifted and Graves' disease ensues. The neurasthenic is unable to control the functions of the nervous system in a normal manner, and the recognition of disturbed endocrine activity helps in understanding the symptomatology, and restoration to health will coincide with the readjustment of the endocrine balance. In many cases there is doubtless a psychic element also, to which great importance has been attached in some quarters, but the elimination of this feature by itself is but rarely sufficient to effect a cure.

With regard to the endocrine factor in neurasthenia, Tom A. Williams is quite emphatic (Author's Abstract, *Med. Rec.*, Apr. 14, 1917, xci, pp. 623-627). "The association of this condition with prolonged mental and physical strain is very usual in his experience. The pathology is the extensive destruction of the medulla of the adrenal gland. That the cortex has an important role, too, was shown by animal experiments, and by a case in whom the post-mortem examination showed complete loss of the cortex, while considerable medullary tissue remained at death at the culmination of a typical Addison's disease clinically, although there was no tuberculosis.

"The chief signs in diagnosis found are marked asthenia, without tachycardia or cardiac exhaustion, although fatigability is sometimes extreme. The presence of apathy depends upon the temperament, as do the psychological disturbances, which are usually not severe. Low blood-pressure is constant, and pigmentation may be present. Either mild somnolence or wakefulness may occur. Atonic dyspepsia or constipation may be present, but they are rarely conspicuous features. Complication by parathyroid insufficiency is not infrequent.

"The treatment in most cases is as simple as that of thyroid deficiency, and consists of feeding with dried adrenal gland. In a considerable experience of this substance, a curious phenomenon has shown itself, viz., the very usual fall of blood-pressure resulting from adrenal feeding in

small doses. Only when the dose is increased to a certain point (which varies in different individuals) does the blood-pressure begin to rise. Another curious phenomenon is that, after some months of improved health, the patient is able to dispense with adrenal feeding and yet remain in good health with blood-pressure augmented to normal. It seems that this must be due to the upholding of the adrenal gland by a specific protein obtained from the gland fed to him. This is the opinion of John Rogers as the result of his experience in feeding gland residues. In the vagotonic cases the addition of calcium-containing food is beneficial and, in mild cases, all that is necessary. In the severer cases, the expensive parathyroid gland must be fed, and when neurohyperirritability causes great discomfort, belladonna must be had recourse to also."

With regard to *dementia praecox*, Abderhalden has expressed the belief that the disease owes its origin to a dysfunction of the sex glands. I. Geikie Cobb ("Organs of Internal Secretion," 3d Ed., 1921, p. 267), who quotes Abderhalden, points out that dementia praecox is essentially a disease commencing in adolescence; in other words, when the fresh internal secretions of the gonads make their appearance and, when they are not "assimilated" to the existing system, they are capable of disturbing the normal balance. This additional and vigorous appeal is such that the cerebral neuronic representatives must suffer strains in their endeavor to meet this call with a corresponding vigor of inhibition. An accumulation of affection tension, or subconscious emotion, is brought about. The physiological channel of outlet for subconscious emotion is the sympathetic nervous system. The chromaffin cells, being developmentally closely associated with the sympathetic nerve-cells, will feel the hereditary biological handicap almost, if not quite, as severely as the neuronic. There will therefore be a hypersecretion of adrenalin, which, in excess of the bodily requirements, is a toxin.

Beverley R. Tucker (*Amer. Jour. Psychiatry*, Oct., 1922, ii, No. 2, p. 261) quotes Kirby and Gibbs (*State Hospital Quarterly*, New York, 1921, vi, p.147) as having called attention to the changes in the size and consistency of the testes in cases of dementia præcox; also Tiffany (*State Hospital Quarterly*, New York, 1921, vi, p. 159), who made microscopic studies of the ovaries and testes in 87 cases of dementia præcox, found interstitial connective tissue increase almost constantly, the Leydig cells diminished in size and number. Absence of spermatogenesis was also found in the testes.

However, at the Psychiatric Institute, Ward's Island, N. Y., it has not been possible to discover, either clinically or at autopsy, any endocrine disorder which one would be justified in regarding as "the cause of dementia præcox." It is possible, Milton A. Harrington admits, nevertheless, that amongst the large group of cases at present classed as dementia præcox, there are some that are definitely of endocrine origin. "A study of the endocrine organs is well worth while, therefore, not with a view to finding in these organs '*the* cause of dementia præcox,' but with a view to separating out from the dementia præcox group those cases that should be classed with the endocrine disorders."

An editorial article in *The Journal A. M. A.* (July 7, 1923, lxxxi, 44) summarizes the investigations of several authors who had come to the same conclusions. However, it is not of as much practical importance whether gonad and other endocrine dysfunction is the principal etiological factor in dementia præcox as rather whether it is of importance at all. Even if the endocrine factor is secondary, it nevertheless has a considerable bearing and may be eliminated, at least, in part, by a suitable "specific," *i. e.*, endocrine therapy.

This position is in keeping with the conclusions expressed by Nolan D. C. Lewis (*Nervous and Mental Disease Monograph Series*, No. 35, p. 124), who has found histopathologic changes in the endocrine glands, particularly in the thyroid, adrenals, and gonads, as universally present as are the characteristic mental symptoms in the clinical picture of a case. The various aplasias, atrophies, scleroses, and patchy hyperplasias of these glands apparently do not depend upon age, duration of psychosis, or the incidence of associated physical disease, and upon careful thorough examination of the structures by modern and improved staining methods, one must conclude that they have suffered in the course of the development of the personality so that their respective functions are subsequently, imperfectly, and aberrantly performed.

If it is true that gonad deficiency in dementia præcox is the result and not the cause of the condition, the usefulness of gonad therapy is thereby not impaired. Symptomatic treatment has its distinct place in therapy and may be resorted to in order to tide the patient over difficult places and to control certain phenomena that inhibit his response to etiological treatment.

THE ENDOCRINES IN GYNECOLOGY.

If we attempt to investigate the part played by the endocrine glands in *gynecology*, we shall be kept busy for far into the night. S. W. Bandler (*"The Endocrines,"* Phil. and Lond.: W. B. Saunders, 1920; also *"Medical Gynecology,"* Phila. and London: W. B. Saunders Co., 1924) for one, expresses his conviction very emphatically to the effect that a great many gynecological afflictions have their origin in, and are maintained by, endocrine disorders. These concern mainly the ovarian apparatus, then the pituitary, the thyroid and the adrenals. It is a matter of course that the other endocrine glands are concerned in many instances. Bandler is by no means alone in his position, as is apparent from the optimistic therapeutic suggestions that Oliver T. Osborne offers in his *"Principles of Therapeutics"* (W. B. Saunders, Phil. & Lond. 1921). And there are many American and foreign authors who agree with the position taken by these two clinicians.

THE ENDOCRINES IN THE SPECIALTIES.

An intense interest has recently been manifested by *specialists* in the influence exerted by endocrine dysfunction in those diseases to which they devote special attention. Some of my friends among ophthalmologists, otologists, dermatologists, and so on, have assured me repeatedly that they find much practical use for endocrine therapy and that the study of their patients from the endocrine viewpoint often helps them to a better understanding of the cases. This is but natural in view of the important functions of these little organs and should not require any elaborate confirmation. I may refer to an article published recently by Professor C. H. Sattler (*Deut. Med Woch.*, Aug. 21, 1925, li, p. 1387), who discusses the relation of internal secretions to the eye. This article has been abstracted in detail in *The Endocrine Survey* for May, 1926, p. 188. It may be said briefly that one of the most spectacular endocrine affections of the eye is the exophthalmos of Graves' disease. Sattler refers the swelling of the pigmented epithelium of the iris to endocrine upset and also mentions inflammations of the iris that are occasionally produced by diabetes mellitus. Cloudiness of the lens even amounting to cataract is considered as being due to parathyroid deficiency. It may be that cataract is favored by insufficient functioning of the Langerhans islands (diabetic cataract) perhaps also by hypogonadism (senile cataract), and by hyperpituitarism (cataract of diabetes insipidus). The best proof of an endocrine influence in the pathogenesis of cataract is seen after partial extirpation of the parathyroid where it is a part of the syndrome of latent tetany. Changes in the

retina and the papilla are observed in pancreatic diabetes. Atrophy of the optic nerve has been caused by excessive administration of thyroid substance. The bitemporal contraction of the visual field caused by pressure on the chiasma by an enlarged hypophysis is well known. Without a doubt, the intra-ocular pressure is dependent upon endocrine function. Hertel found the pressure lower in animals that had been given thyroid substance; in patients with hyperthyroidism the pressure is usually low; in those with hypothyroidism it is higher than normal, and the latter may show other symptoms of glaucoma. It is of practical importance that thyroid medication can lower the pressure in glaucoma, sometimes even after miotics have failed to give results. In passing, it may be mentioned that intravenous injections of adrenalin have caused the intra-ocular pressure in glaucoma to become lower.

With regard to *otosclerosis*, different opinions have been expressed and, very naturally, an endocrine disturbance has been postulated. About two years ago, Dana W. Drury, of the Evan's Memorial, Boston (*Boston Med. and Surg. Jour.*, June 12, 1924, cxc, p. 1029) published the results of a clinical and laboratory study covering a period of eighteen months and designed to ascertain if there be any endocrine influence demonstrable in otosclerosis. Out of a total of forty-four cases, eighteen (40.9%) were found to have another than an endocrine etiology, while endocrine disturbances were present in twenty-six (59%). When the endocrine function was abnormal, it was inclined to be lowered rather than increased. Several individual foci were implicated, namely, the pituitary, the thyroid, and the ovary.

In *dermatology*, a relation to abnormal functioning of the ductless glands and also of the sympathetic nervous system is incriminated with increasing frequency. Drs. Fred Wise and Joseph J. Eller, of Columbia University, New York, classify skin diseases in six groups, some of which being associated with metabolic changes that may be toxic, others being related to anaphylaxis, to focal infection, to affections of the nervous system. One group of skin diseases has, as a probable etiological basis, disturbances in endocrine functioning and in this group the authors include scleroderma, atrophoderma, dermatitis dysmenorrheica, acne vulgaris, Recklinghausen's disease.

The association of some skin affections with emotional disturbances is illustrated by H. H. Hazen and E. R. Whitmore (*Arch. f. Dermat. u. Syph.*, Aug., 1925, xii, p. 261), who remind us that emotional disturbances cause such transitory cutaneous manifestations as blushing, pallor, or excessive perspiration. They report cases of distinct erythema of from one hour's to three day's duration, which were due clearly to emotional upset. They claim that in a small group of cases urticaria may follow emotional disturbances, even though most commonly it is an expression of anaphylaxis.

With regard to the relation of the endocrine glands to the *teeth*, especially where associated with *rickets*, Dr. W. G. Ward contributed a very interesting article to the *Medical Journal and Record* for December 16, 1925, in which the various lesions of the gums and teeth are shown to be in part due to endocrine insufficiency. This may affect the thyroid, the parathyroid, and the thymus, more especially. Dr. Ward orders a carefully regulated diet, living under suitable hygienic conditions with lots of fresh air and a reasonable endocrine treatment consisting of a combination of the parathyroids with thyroid and calcium lactate. A number of interesting papers on the subject of the endocrines in dentistry has appeared, some of which have been abstracted in *The Endocrine Survey* (Sept., 1924, i, p. 484; Oct., 1924, i, p. 521; Nov., 1925, ii, p. 460; Mar., 1926, iii, p. 105).

OLD AGE.

Finally, in common with some other writers, Arnold Lorand (*"Old Age Deferred,"* F. A. Davis Co., Philadelphia, 1920) is inclined to consider old age as a pathological condition, at least at the early period at which it declares itself among civilized people, and claims that it depends on certain changes in the ductless glands, especially the thyroid and the gonads. Indeed, he paraphrases the famous dictum about a man being as old as his arteries to: the age of a man depends on the quality of his thyroid. This is in keeping with the opinions expressed by Leonard Williams, of London, whose recent book, *"Middle Age and Old Age"* (Oxford Univ. Press, N. Y., 1925), makes highly interesting reading, not only for those who are approaching middle age or old age, but for the younger ones, too. For nobody is spared the ultimate *descensus Averni*, so to speak. Despite a somewhat sarcastic review in *The Lancet* (June 13, 1925, ccviii, p. 1246), Dr. Williams' book may be recommended for careful study, not only for any personal benefit, but because it is replete with practical suggestions for the study and relief of those complaints that elderly patients so constantly refer to the consideration of physicians.

TOXIC STATES.

In addition to these and various other maladies that have been brought into direct or indirect etiological connection with endocrine dysfunction, there are numerous other states of impaired health in which the same factor is held to be active. Many times, the evidence is that provided by a successful therapeutic experiment; in others, the connection is claimed on the basis of perfectly rational ratiocination. For instance, in the manifestations of toxemia of pregnancy such as severe vomiting, eclampsia, etc., an endocrine influence is quite logical and, in truth, endocrine and other organotherapeutic measures have worked great benefit and even cure, in numerous instances. Migraine, also asthma, those afflictions of innumerable theories and therapies, show in many cases evidences of endocrine insufficiency and yield to appropriate remedies. In urticaria and other manifestations of anaphylactic shock, epinephrin is commonly employed with success. Intestinal intoxication impairs the functioning power of the thyroid, the hormone apparatus of the liver, and that of other organs producing internal secretions. In these cases, the addition of hormone support to the other therapeutics measures proves the existence of an endocrine factor by the prompter response of the patient to the treatment.

What has been said in the foregoing by no means exhausts the clinical conditions in which an endocrine factor has been proved to exist. Despite the objections of abstract science, clinical medicine has found its search for additional light on many obscure problems successful. It is not astonishing then, that endocrine therapy is constantly gaining in favor and that it has come to be an essential addition to the materia medica of the practitioner in medicine.

It is not claimed that endocrine therapy is a shortcut to success or that it is a cure-all. Haphazard prescribing will bring disappointment here as it does with other methods of treatment that are practiced uncritically. Moreover, the administration of endocrine remedies is only rarely the only measure called for. Whether these remedies are indicated to stimulate and support a lagging endocrine function or to restrain an excessive production, it is always necessary to study the patient from all possible angles. Infectious foci and sources of toxins must be discovered and eliminated. Constipation and its sequel, intestinal autointoxication, must be corrected. A suitable diet and proper habits of living must be insisted upon. Very often persistent attention to these points will be sufficient to restore the patient to health.

In numerous cases, though, the results of treatment are not fully satisfactory until the existing dyscrinism is remedied by an appropriate endocrine therapy. *Curationes ostendunt naturam mali* may be criticized as *post hoc ergo propter hoc* reasoning. It is not necessarily so. Very often the outcome of the "therapeutic experiment" actually affords the proof that the physician's reasoning has been correct.

INTRAOCULAR MANIFESTATIONS OF SYSTEMIC DISEASES.*

W. S. SIMS, M. D.,
JACKSON, MISS.

First, a brief description of the indispensible instrument that makes it possible for us to explore the fundus of the eye may be of some interest. To Helmholtz belongs the great credit of the discovery of the Ophthalmoscope, an instrument by which we can view the interior of the eye. Up to this time (1851) intraocular diseases of the eye were classed under the head of amblyopia and amaurosis. The instrument enables us to explore the interior of the eye and diagnose lesions of which previously we had little knowledge. Of equal importance is the power of recognizing fundus changes which constitute valuable signs in the diagnosis of systemic diseases.

The principle of ophthlmoscopy is to bring the source of light in line with the reflected or returning rays. The original opthalmoscope as devised by Helmholtz consisted simply of a glass plate placed in a certain position to receive rays from the source of light that are in return reflected through the pupil into the eye. They are again reflected from the fundus of the eye and partly enter the observer's eye. From time to time improvements were made. The first was a mirror coating of the plate that increased the reflecting power. This was followed by a round hole in the plate of glass, enabling the observer to see through the mirror coating. Later a decided improvement was made by Ruete in 1852 with a perforated concave mirror. Liebreick's ophthalmoscope is not without some merit. Following this, Loring introduced his instrument with a disc containing convex and concave lenses which gives us a sharp image of the retina. At last we have now what we believe to be a perfected instrument in the device known as the electric ophthalmoscope. While these improvements are of great value, the principle of the ophthalmoscope as discovered by Helmholtz remains the same.

RETINITIS.

Inflammation of the retina presents various clinical types, but there are certain symptoms that are more or less common to all varieties.

The usual subjective symptoms—impaired vision, sometimes more marked at night, changes in the field of vision, alteration in the shape of objects and reduced light sense.

Objective symptoms—There are no external signs, but with the ophthalmoscope we observe diffuse clouding of retinal details, especially in the region of the papilla, exudations, distention of the vessels and hemorrhages of various shapes and sizes.

Treatment—The local treatment consists of absolute rest of the eyes, protection from light with smoked glasses, and often the use of atropine.

In addition it is of the greatest importance to treat the constitutional condition which is the cause of the retinal lesion.

We will now speak briefly of the various clinical types:

ALBUMINURIC RETINITIS.

This disease usually presents well marked ophthalmoscopic signs which are very characteristic. Pure white spots, found chiefly at the macular and surrounding the disc,

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*Read before the Mississippi State Medical Association, Jackson, May 11-13, 1926.

less frequently elsewhere. At the macula these spots are usually arranged in radiating lines which form a star-shaped figure with the fovea for a center.

The condition is of great prognostic importance and indicates a fatal termination in from six months to two years.

Treatment must be mainly directed to the nephritis.

URAEMIA.

Uraemia is a term used for loss of sight due to the retention of substances normally excreted by the kidneys.

Treatment is that of uremia.

DIABETIC RETINITIS.

The appearance of this form of retinitis is in small white spots in and around the macular region, grouped irregularly and not in the form of the stellate figure as in albuminuric retinitis. There is no swelling of the optic nerve or retina.

The progress depends upon the systemic condition or treatment.

Treatment is that of diabetis.

SYPHILITIC RETINITIS.

This usually appears in the acquired form during the first or second year.

There is usually great swelling of the retina and disc and fine dust-like opacities of the posterior portion of the vitreous.

The treatment is well known to all of you, but I want to emphasize the importance of early and vigorous treatment.

Retinal changes due to excessive light, as looking at the sun with insufficient protection; electric light, as in electric welding, and sun-light reflected from snow. This is not due to a burn as was believed at one time, but to pigment changes at the macula. The changes may be less marked after a time, but do not disappear entirely.

Changes in the fundus in arteriosclerosis. The lesion is often first discovered by an ophthalmological examination and is important because it is sometimes the first evidence of the existence of this very serious vascular lesion. It usually indicates similar lesions in other parts of the body, especially the brain. The fundus presents increased tortuosity and beaded appearance of the blood vessels; interruptions or breaks in the vein where they are crossed by the arteries. White lines along the course of vessels is also a very valuable point in diagnosis. The corkscrew appearance of the small vessels should be looked for.

EMBOLISM OF THE CENTRAL ARTERY.

We understand from this a plugging of the central artery of the retina by a non-infected embolus, causing a sudden blindness.

Objective signs. The ophthalmoscopic appearance is very charateristic. The fundus becomes pale, even milky. At the situation of fovea there is a bright cherry-red spot. This is due to the red color of the choroid seen through the very thin retina opposite this area.

The condition is most frequently due to a valvular heart disease.

Treatment is rarely effective. If the case is seen early inhalation of amyl nitrite, massage and paracentesis of the cornea may be employed for the purpose of driving the plug along into one of the smaller branches.

RETINITIS PIGMENTOSA.

This is a chronic form of retinitis which has a constant tendency to become worse, terminating in advanced years in complete blindness. The ophthalmoscopic examination shows black spots in the periphery of the fundus, and presents the appearance of bone corpuscles.

The disease affects both eyes and is either congenital or develops in childhood. It is hereditary and is often found in the offspring of consanguineous marriages.

There is no known treatment.

DETACHMENT OF THE RETINA.

Retinal detachment is a separation of the retina from the choroid. The separation is usually caused by serum, but may be the result of a hemorrhage, exudation or tumor. It is most often found in myopic eyes of high degree.

The prognosis is unfavorable. Even after improvement relapses are the rule, and complete blindness is the usual end.

CHOKED DISC.

This condition presents itself as a swelling limited largely to the disc, with extreme dilatation and tortuosity of the veins.

We recognize two types of choked disc. First a papilledema in which the condition is suggestive of compression causing edema or the non-inflammatory variety.

In this variety, the lesion in typical cases is limited rather sharply to the disc with scarcely any changes in the retina.

Brain tumor is the most frequent cause of papilledemae, and is sometimes the first symptom of an intra-cranial growth.

Temporary relief can usually be obtained by trephining the skull, but the removal of the tumor is the only hope of a permanent cure.

Second: The inflammatory type may be divided into the descending neuritis and neuroretinitis. In the former the appearance indicates inflammation and is attended with moderate swelling of the disc with some exudate covering the surface and margins, and slight fulness of the veins; and not limited to the disc, but extends to the retina.

In neuroretinitis there are added to the signs of neuritis just given, evidence that the retina is extensively involved, such as hemorrhages, exudates and degeneration. In advanced and long standing cases, no sharp line can be drawn between these three types as transitional stages occur, and a study of other symptoms are necessary to arrive at a proper diagnosis.

The treatment must be directed against the cause.

Orbital and periorbital diseases contribute a large number of the second and third class. A goodly number can be traced to general diseases, especially infective diseases.

DISCUSSION.

Dr. J. W. Barksdale (Jackson): Dr. Sims was kind enough to ask me to discuss his paper. I will not presume to discuss the ophthalmological changes that so few of us are familiar with, but I would like to stress what Dr. Elmore said this morning, that every practitioner of medicine should be able to use an ophthalmoscope. No later than this past week I had a case of albuminuric retinitis, which is a late manifestation of Bright's disease. Intraocular manifestations are important in many systemic diseases. I think those of us who do surgery are more vitally interested in intraocular findings than the general practitioner, because in them we frequently get a definite line on intracranial disease when we can do it by no other means. Intracranial tumors practically always show optic neuritis. Frequently it is almost impossible to differentiate between choked disc, optic papillitis, and neuritis of the optic nerve head, but there is a difference, and the differentiation helps to decide whether we are dealing with Bright's disease, or whether we may expect to encounter changes in the brain or the presence of brain tumor.

I will not enter into a discussion of retinal hemorrhages from injury, or the localization of certain intracranial growths, bilateral hemianopsia, and things which can be determined by the man who is an expert in the use of the ophthalmoscope, except to emphasize this point—if you are unable to make a reliable diagnosis, call in help. These are physical findings and it is a question of interpreting these physical findings, and if you cannot do it get someone else to do it for you. Intraocular findings are neglected almost more than any other in medicine, and almost every man in a month has some cases on which the ophthalmoscope would throw valuable light.

A SIMPLE, RAPID PRECIPITIN TEST FOR THE DIAGNOSIS OF SYPHILIS.*

H. W. BUTLER, M. D.,

NEW ORLEANS.

In order to investigate the merits of the precipitation test for the diagnosis of syphilis, the Meinicke,[1] Sachs Georgi,[2] Sigma,[3] Priestly,[4] and Kahn[5] precipitation methods were studied. The reactions of twelve hundred blood sera were compared, using the Kolmer-Wassermann method against the Kahn precipitation test. With some exceptions, the results were comparable.

During this study, a simple slide test was developed which has special advantages because of its simplicity. The specificity of the test resides entirely within the antigen. It has been possible to produce an antigen whereby certain new features are added to the test. Inactivation of the serum is unnecessary, and the results are immediate and easily read with the unaided eye.

Antigen Preparation. Fresh baby veal hearts are selected, and the superficial fat is removed. The muscle is ground in a sausage grinder, spread on paper and dried with the aid of an electric fan. After it is completely dried, it is powdered in a mortar and extracted with ether. Four hundred c.c. of ether are used to each 100 gm. of powdered heart. This is allowed to act for ten minutes, shaking frequently, and the ether is then filtered off. The material is extracted again three different times with 300 c.c. of ether, which is filtered off and discarded in each instance. The ether-extracted powdered heart muscle is now dried free from ether, and for each gram of the dry material, 5 c.c. of 95 per cent alcohol are added and masceration is allowed to continue for three days at room temperature, after which the alcohol is filtered off and enough 95 per cent alcohol added to bring it up to the original volume. This constitutes the defatted alcoholic heart extract for the antigen. Six decigrams of cholesterol and 3 c.c. of glacial acetic acid are added for each 100 c.c. of the alcoholic extract. This is filtered after solution is effected and constitutes the finished special antigen for this test. This antigen seems to be stable for at least several weeks.

Technic. One c.c. of antigen is measured into a test tube and 2 c.c. of distilled water are measured into a second tube (normal saline can be used, but the solution is unstable). Mixing is effected by pouring the solution from one tube to the other, back and forth for at least six times.

Two drops of serum are placed upon a clean slide about the junction of the middle and outer third. With a pipette, used only for the antigen dilution, three drops of the dilution are placed upon the slide near, but not into the serum. These are mixed on the slide thoroughly with the end of a toothpick or other suitable instrument and the slide is slowly rocked for two minutes. If the serum is positive, a characteristic granular precipitate which can be easily seen, develops during the rocking process. If negative, no specific precipitate forms within the two minute time limit.

Other dilutions can be made to check results if desired, i. e., one drop of serum to five of antigen dilution or three drops of serum to two of antigen dilution, none of which should show the precipitate if negative. Occasionally a positive serum is more definite in one of these other dilutions. Negative tests should not be read after drying begins, because some sera become granular when the preparation is concentrated. If only one dilution is used on a blood, the one containing two drops of serum and three drops of antigen dilution is the one which we have found to be most sensitive. The other dilutions are neces-

*Read before the Orleans Parish Medical Society, May 24th, 1926.

†From the Department of Medicine, School of Medicine, Tulane University of Louisiana.

sary in an occasional blood, probably because of the variation in the range of the zone of inhibition.

RESULTS OF THE WASSERMANN, KAHN AND SLIDE TESTS IN 500 SERA.

	Wassermann	Kahn	Slide
379	—	—	—
34	++++	++++	++++
10	++++	(Not enough serum)	++++
1	+++	+++	+++
8	++	+	+
1	++++	++	—
10	—	++++	++++
8	—	++++	—
4	—	—	++
3	anti-comp.	++++	++++
1	anti-comp	—	—
1	++++	Not tested	+++
1	+++	Not tested	+++
2	++++	Not tested	+++
3	++++	Not tested	++++
35	—	Not tested	—
500			

Summary. A modification of the precipitin test is presented, which shows a high degree of selectivity for Wassermann positive bloods. This test is simple and easy to perform, factors which greatly enhance its practical value, as compared with other methods of testing the blood for syphilis.

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4. Priestley, A. H.: Slide Precipitation Test for Syphilis, Lancet 1: 1260 (June 23) 1923.
5. Kahn, R. L.: A Simple Quantitative Precipitation Reaction for Syphilis, Arch. Dermat. & Syph. 5: 570 (May) 1922.

DISCUSSION.

Dr. Bass: The test which Dr. Butler has devised and which may properly be called the Butler test has the great advantage of being so simple and practical that it will be available to all who wish to use it. It places in the hands of the physician, wherever he may be located, a laboratory test for syphilis which present information indicates, is as significant or dependable as any one of the other tests now available.

Even if further experience should prove it not to be quite as sensitive as other complicated strictly laboratory tests, the simplicity and availability of this one would indicate a large field of usefulness for it.

Dr. F. M. Johns: I should like to compliment Dr. Butler on his practical, new test. We have been searching for a precipitation test for many years—precipitation tests have been proposed from year to year, and I believe for the first time we have been given in a practical form, a real precipitation test. I think it is quite a different test from the Kahn and other tests—I think it is much more simple and much more reliable. For the present, I believe, it would be a little bit unwise to sidetrack the Wassermann, but as a means to safeguard the Wassermann, I think this test should be performed as a routine.

Dr. R. L. Gordon: The laboratory side of this subject has been discussed thoroughly, however speaking from the genito-urinary man's standpoint, such a simple test for syphilis should not be discarded or cast lightly aside.

Most of the men here will listen to the technic but will think they can't use it, but it is really very simple. Any man doing genito-urinary work knows that patients are prone to lie about, or be in ignorance of their initial infection. Here is a test that is useful not only to the examining physician, but also has a sociological standpoint, for by its use we may often be able to discover unsuspected syphilis and do the patient a lot of good.

If this test be done on a patient and found to be positive, I believe it would be a good plan to have it clinched with a Wassermann before beginning treatment. Such a simple test will not only aid in the diagnosis but will help you to make more money for yourselves, as you all know we miss much by mere cursory office examinations and not properly checking back on our patients. This is a test that you can easily do and no doubt you will be surprised at the number of overlooked luetics that you will discover.

Dr. Butler should be commended for trying to simplify laboratory medicine. Most of us look upon the Wassermann reaction as an art and hidden mystery and a few of us understand it. Anybody can do what Dr. Butler has outlined tonight, and no doubt it will at least pay the genito-urinary man to become familiar with the test and at least give it a fair trial.

Dr. H. W. Butler (closing): I do not urge you to use the test but I am sure that it will be of great assistance to you in your diagnostic work.

FURTHER FALLACIES OF THE SHEPPARD-TOWNER PROPAGANDA.

WILLIAM C. WOODWARD, M. D.,

Executive Secretary, Bureau of Legal Medicine and Legislation of the American Medical Association,

CHICAGO.

1. *In support of pending legislation to authorize appropriations to carry the Sheppard-Towner Act into effect for two years beyond the date originally set for it to expire, it is urged that this is merely a temporary expedient, designed to prevent the loss of the money and effort already expended under the Act. The record shows, however, that is not the case. The extension of the Sheppard-Towner Act now sought, for two years only, is merely one of a series of extensions that will be sought if this extension be granted. In fact, proponents of the Sheppard-Towner plan regard the Act as permanent legislation.*

In the report of the hearing before the Committee on Interstate and Foreign Commerce, House of Representatives, January 14, 1926, on H. R. 7555, the bill authorizing further appropriations for carrying the Sheppard-Towner Act into effect, on page 51, we find the following statement by Miss Grace Abbott, Chief of the Children's Bureau:

"The committee is familiar with the fact *that the legislation enacted in the maternity and infancy act is permanent;* the only thing that is not permanent is the authorized appropriation for the five-year period."

In the Congressional Record, April 5, 1926, page 6725, the same view was stated by Representative Barkley, when he spoke in support of the bill:

"My only regret is that this authorization is limited to two years. *I would advise gentlemen of the fact that this is permanent legislation. The Sheppard-Towner bill is a permanent law.* It only provided originally for a five-year authorization of appropriations. This merely extends the authorization two years, *but the law itself is permanent law.* * * *"

The same view was adopted by Senator Sheppard, in the *Congressional Record,* April 14, 1926, page 7254:

"As to the present status of the measure, let me add that, after consultation with the Budget Bureau and the President, the Secretary of Labor transmitted to Congress a recommendation for the continuation of the appropriations under the maternity act for two additional years. *The act itself is permanent legislation.*"

It could not well be made clearer that the proponents of this legislation expect to keep the Sheppard-Towner plan as a permanent part of our Federal organization. But whether they do or do not plan to go that far, it is clear that they have no intention of abandoning the scheme at the end of the two years extension they now seek. For turning to the printed report of the hearing before the Committee on Interstate and Foreign Commerce, House of Representatives, we find the following:

"Mr. Newton. Now this further question. Do you consider that the two years is sufficient?

"Miss Abbott. Well, I do not consider it sufficient if it is to end at the two-year period. I did not think in asking that period of time that that was the intention either of the Secretary of (or) the President that there was to be no further extension after the two-year period." *Page* 12.

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"Mr. Lea. What time would you specify for a certainty that, in your judgment, the United States should remain in this work?

"Miss Abbott. Well, I do not want to specify for a certainty.

"Mr. Lea. Do you think four years?

"Miss Abbott. No; I would rather say five as the time that the Government would without question need to continue the work.

"Mr. Lea. You are certain that the Government should stay in for five years?

"Miss Abbott. Personally, I am; yes. But I am supporting the recommendation of the Secretary and the President for the two-year period, with a view to showing accomplishments and needs still existing at the end of that time." Page 14.

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"Mr. Rayburn. You would not hazard an opinion on just when you think you could recommend that the Government go out of this supervision?

"Miss Abbott. No; because I think it is a factual thing. I am not a prophet, after all, as to when that condition may come to pass." Page 15.

With such testimony as that of Miss Abbott, the statement that has been made in support of the pending bill, that "there is no disposition to extend Federal cooperation beyond the next one or two years," is certainly without foundation.

2. *Attempts to justify an extension of the life of the Sheppard-Towner Act by showing the extent of activities in the field of maternal and infant hygiene since that act passed are inadequate unless they show the results of such activities, and this they do not do.*

"Child-health conferences," "school conferences," "infant clinics," "institutes," "public talks," "patterns distributed," "milk letters, with instructions to mothers," and similar activities (*Congressional Record*, April 14, 1926, pages 7254-7272) are at best merely agencies to conserve health and life. Evidence showing only that such activities are going on does not prove that they are accomplishing that result. Such evidence is even further from proving that such activities are being conducted efficiently and economically, or that they are being conducted under the Sheppard-Towner Act better than they could have been conducted by the states alone. The evidence offered is inadequate, too, to permit intelligent judgment as to the relation of such activities to the Sheppard-Towner Act, for such evidence very generally fails to show the nature and extent of similar activities in the same jurisdiction before the act was passed.

3. *The assertions that have been made that there have been substantial reductions in infant and maternal mortality, with the implication that such reductions have been due to the Sheppard-Towner Act, are not supported by the evidence.*

In the *Congressional Record*, April 5, 1926, on page 6720, in the argument of Representative Newton in support of the Act, the following appears:

"Since the operation of this act there has been a substantial decrease in both the infant mortality and the maternity death rates."

Representative Newton then submits tables showing that in the three Sheppard-Towner years, 1922-1924, inclusive, the infant mortality rate for the registration area fell from 76 to 72, and the maternal mortality rate fell from 6.8 to 6.6. Such a decline could hardly be regarded as "substantial." But even if it were, it could not be accepted as an argument in favor of the Sheppard-Towner Act; for during the three years immediately preceding, namely, 1919-1921, inclusive, the infant mortality rate fell from 101 to 76, and the maternal mortality rate fell from 9.2 to 6.8. Of course, we know that the improvement shown by the figures last stated was only relative and that the decline was great because of the high mortality due to influenza in the year preceding the triennium named and from which the decline is computed. But what the improvement in 1922-1924 was due to, and how long it will continue, we do not know.

As a fallacious argument offered in support of the Sheppard-Towner bill recently passed by the House, we find the following by Representative Barkley, in the *Congressional Record*, April 5, 1926, page 6725:

"Taking the United States as a whole, in 1920, which was the year before the enactment of this law, the number of children who died in infancy amounted to 86 out of every 1,000 in the United States. In 1924, four years after the passage of this law, the death rate among children in the United States had been reduced from 86 to 71 per 1,000. This is a reduction of nearly 20 per cent in less than four years."

The Sheppard-Towner Act was not approved until Nov. 23, 1921. Obviously, its enactment could not have influenced the infant mortality rate for 1921. Why, then, did not Representative Barkley take the infant mortality rate for 1921 as a basis for comparison, instead of the infant mortality rate for 1920? The infant mortality rate for 1921 was 76. The decline, therefore, under the Sheppard-Towner regime was from 76 to 72. It was only 5 per cent in three years, not 20 per cent in less than four years as stated. And no evidence is offered to show that the Sheppard-Towner Act had anything to do with even such decline as did occur.

4. *Statements made to show the extent to which infant and maternal mortality are preventable, in support of an argument for the enactment of the pending legislation, are without adequate foundation.*

In the *Congressional Record*, March 31, 1926, page 6434, Senator Sheppard is quoted as referring to certain studies and investigations made by the Children's Bureau as follows:

"It was found that nearly 20,000 mothers and almost 200,000 infants under 1 year of age were dying in the United States every year *from lack of proper knowledge as to the hygiene of maternity and infancy.*"

As a matter of fact, according to the Twenty-fourth Annual Report of the Bureau of the Census, covering Mortality Statistics, 1923, published in 1926, page 126, there were in the entire registration area of the United States in 1923, only 166,274 deaths of children less than one year old, from all causes. The estimated population of the registration area was 96,986,371, and the estimated population of the entire continental United States was only 110,663,502. (See Report cited, page 8.) And yet, unless Senator Sheppard has misinformed us, investigations by the Children's Bureau disclosed the fact that almost 200,000 infants under one year of age die in the United States every year *from lack of proper knowledge as to the hygiene of maternity and infancy.* If the reported findings of the Children's Bureau are correct, where do the extra babies come from each year, who die from lack of proper knowledge? And where do all the babies come from who die every year from other causes?

A similar discrepancy exists with respect to maternal mortality. In support of the Sheppard-Towner Act, the Children's Bureau is quoted as authority for the statement that "nearly 20,000 mothers * * * were dying in the United States every year from lack of proper knowledge as to the hygiene of maternity and infancy." And yet the Report of the Census Bureau, cited above, page 176, shows that the total number of deaths in 1923 in the entire registration area, containing nearly nine-tenths of the population of the continental United States, from accidents of pregnancy and labor, and hemorrhage, blood poisoning and other conditions incident to puerperal state, was only 15,505.

5. *Comparisons between maternal mortality in the United States and maternal mortality in other countries, to the discredit of the United States, are not justified by comparable records.*

Referring to studies and investigations made by the Children's Bureau, Senator Sheppard, according to the *Congressional Record*, March 31, 1926, page 6434, said:

"Reports from the birth-registration area of the United States showed that from 1915 to 1920 the death rate of mothers from causes relating to maternity was increasing. It was shown that the death rate of mothers in the United States from these causes was the highest for any nation in the world for which recent figures could be obtained, and that seven foreign countries had infant death rates lower than the United States."

The reason for the increase in maternal mortality in 1920 as compared with maternal mortality in 1915 is not hard to find. In 1920 many expectant mothers died from influenza, and their deaths were charged to pregnancy; in 1915 influenza did not contribute to such mortality.

But probably the most overworked figures that have been used in the support of the Sheppard-Towner propaganda are such as those referred to above, purporting to show an exceedingly high maternal mortality rate in the United States as compared with the maternal mortality rates in other countries. Concerning comparisons of that kind, the Bureau of the Census has this to say:

"As already pointed out, the classification of deaths from puerperal causes differs greatly in different countries. Higher rates in one country than in another, therefore, do not necessarily mean higher mortality from these causes. However, as classification in a given country presumably differs but little from year to year, the rates do presumbaly serve as useful measures of mortality from these causes within the country itself.

"Comparing the rates of 1923 with those of 1915, for puerperal septicemia, the United States shows the same rate for both years, England and Wales a reduction of 13.3 per cent in its rate, Australia an increase of 30.8 per cent, New Zealand an increase of 137.5 per cent, and Scotland the same rate for both years. For other puerperal causes, the United States shows an increase of 5.4 per cent; England and Wales a decrease of 7.4 per cent; Australia an increase of 17.2 per cent; New Zealand a decrease of 15.4 per cent; and Scotland an increase of 7.1 per cent. *Twenty-fourth Annual Report, Bureau of the Census, Mortality Statistics*, 1923, *published in* 1926, *page* 64.

Just what comfort Sheppard-Towner propagandists can get out of these figures is hard to see.

6. *Even if it could be admitted that infant and maternal mortality rates were as bad as the proponents of the pending legislation assert, and that it is as easily reducible as some of them claim, there is no evidence to show that preventive measures can be applied more effectively by the Federal Government than by the State.*

So far as is known, not a single advance in methods for preventing infant and maternal mortality has been made by the Children's Bureau since the Sheppard-Towner Act was passed. It has merely adopted methods devised and in use by the several states and cities of the country. Obviously, supervision and control of such activities over the entire land area of the United States, approximately 3,000,000 square miles, by a federal bureau in Washington, must entail a heavy overhead expense—or must be supervision and control on paper only.

EXTRAOCULAR FOREIGN BODIES.

CAREY CHEEK, M. D.,
SPRINGFIELD, MISSOURI.

You will find this paper nontechnical. When I was invited to read a paper, I was told that it was to be before the General Assembly. If I had known I was to ap-

pear before your Section I would have prepared one more technical.

For some time I have been very much interested in the minor injuries of the eye, mainly because they are so numerous and also because they are treated in such a manner that complications such as ulcers, necessitating loss of time and impairment of vision are altogther too common.

A patient comes into the office and says he has "something" in his eye. He has arrived at this conclusion because he has one of these symptoms:

(1) A scratching sensation in the eye, usually under the upper lid.

(2) Pain in or around the eye.

(3) Redness of the eye ball.

(4) Light is painful to the eye.

Now one or all of these symptoms may be present and denote a foreign body present, or some other condition such as conjunctivitis in all of its forms, trachoma, hordeolums, chalazions, cysts along the lid margin, displaced cilia or abrasions of the cornea.

So the first thing to do in this case is the same as in all others, namely to diagnose the condition present. Anyone that has a good light, a magnifying loupe, as Berger's or Beebe's, and a 20 diopter lens to focus the light can locate any foreign body no matter how small it happens to be. Foreign bodies under the lids can be easily removed provided they are not located under the conjunctiva. When in the latter location it is my practice to catch them up with fixation forceps and split the conjunctiva and shell them out. If they hang in the conjunctiva and are not easily removed I snip away the piece of conjunctiva in which the foreign body is entangled. A suture can be put in place to approximate the two conjunctival surfaces if it is deemed necessary. If a particle of metal or rust stain has been in the cornea for several hours infection sets in with resulting death of corneal epithelial cells. If a drop of 2% Fluorescein solution is instilled in these eyes this dead epithelium will stain, and will help you to locate the foreign body, as well as demarcate the infected area which should be removed along with the foreign body. This stain is also very useful in differentiating abrasions of the cornea from foreign bodies. All of you well remember when your professor in medical school was lecturing on foreign bodies in the cornea, he told you just to seat your patient facing the window and the distorted window reflex would tell you if a foreign body was present. Well this is true of large substances as beetle wings and boiler scales, but don't overlook half a dozen pieces of emery dust while using this method. Most all corporations are now compelling the employes to wear goggles and the foreign bodies that sift through the ventilating holes must be small.

No attempt should be made to remove a foreign body from the cornea without first using a local anesthetic. Of the list two are effective, Cocaine in a 4% solution, and Butyn in a 2% solution. I prefer the latter because it does not dilate the pupil and is not a narcotic. Two drops of either solution will thoroughly anesthetize the cornea in two minutes time.

As to the instrument to use in removing corneal foreign bodies, each one of us will probably have his choice. Personally I prefer a cataract knife. This is light, sharp and well balanced. This should be placed at an angle of 70 degrees to the cornea and with the point pressed firmly under the particle to be removed; then lift upward and outward. In this operation too many men are prone to scrape and jab in the general direction of the particle to be removed and trust to luck to dislodge it. This method destroys the epithelium over a large area and of course makes the eye painful and prolongs the healing time. We must remember that the majority of these patients are day workers, and if we care-

lessly disable them they are just that much worse off financially at payday. I have seen cases where the epithelium was scraped off of one-fourth of the cornea where one was removing a foreign body that perhaps did not measure over one-fourth of a millimeter across, in its greatest diameter. This of course is going to an extreme in carelessness. I once saw a young doctor going to the opposite extreme, and which I thought was almost as bad. He was directing a stream of water from a small syringe against an embedded particle of rust and attempting to remove it in this manner. Of course this was a useless method for a case of this kind. Naturally being curious, I asked him about his method. He said he was taught in medical school that this was the only method to use, as all instruments should be avoided as you were liable to perforate the cornea in using them. Well I have never yet gone into the anterior chamber in using an instrument, and I use sharp ones. A good way to check up on yourself is to instill a drop of fluorescein solution into the eye after you have removed a foreign body: this will tell you how much epithelium you have needlessly removed. Sometimes you will be surprised and mortified at what the stain will show.

After the foreign body has been removed from the cornea comes one of the most important points of this operation—namely, the after treatment. Formerly little or no attention was given to the eye unless an ulcer developed, and I am sorry to say that this complication happened rather frequently. Now when we are all thinking of preventing disease the same as of curing them, we prevent most all of these eyes from becoming infected. Among most men the prevalent treatment is to put a few drops of Argyrol solution, varying in strength from 5 to 12%, in the eye and letting it go at that. I have almost discontinued the use of this drug on account of its irritating effect on some eyes when the silver is precipitated by the chemical action of the tears. Also I do not like the stain that is made around the wound. If your patient is seen by another physician he will see this stain and immediately conclude that you failed to remove all of the foreign body and he will take a further swipe at this thereby making a larger denuded area in the corneal epithelium, which of course results in a worse eye than was necessary. This second operation also loses you a patient for nothing will ever make him believe anything else but that you failed to do your job thoroughly in the first place.

At present I am using instead of the silver salts, 2% yellow oxide of mercury ointment as an antiseptic in the eye. I find this nonirritating; also it has the added advantage of being lubricating, which makes the scratching sensation less annoying. We all know that until the corneal wound heals this sensation persists, usually lasting about twelve hours in deep wounds.

Lastly I bandage the eye, using an eye pad fastened on with adhesive plaster. The bandaging the eye is contrary to the advice and practice of most of you I am well aware. The apponents say this is a dangerous procedure as infection is more liable to occur; I have not found this to be the case. I favor the bandage because the eye is more comfortable, all iris reflexes except the consensual being abolished; the movement of the eyeball are limited to the minimum. From the legal standpoint the bandage is absolutely necessary, and we must not forget that each patient we treat is a potential lawsuit in this day of easy judgments. About five years ago there was published in the A. M. A. Journal an account of a suit and judgment against a doctor, and the verdict rested on this one point. He had removed the foreign body skillfully and completely, and had put an antiseptic in the eye, but he had failed to put on a bandage. The Appeal Court sustained the verdict. At the present time there is a

suit pending in my town alleging this same fact, that the eye was not bandaged.

I tell my patients to leave the bandage on for 24 hours, and to expect the eye to feel scratchy for the first few hours. At the end of this time if the eye is still painful to return to me for another examination. In this way if any infection has occurred I can arrest it at once.

During the last two and one-third years, my partner, Dr. D. M. Huffman, and myself, have removed foreign bodies from the corneas of over twelve hundred patients, and with minor variations the above routine has been followed in all cases. These were made up of industrial people for the most part, the majority being employes' of the Frisco Railroad. Some of these foreign bodies had been in the eye for as long as four days, during which time well meaning friends and neighbors had attempted removal. In none of these cases did an ulcer of any consequence develop, where none was present when the case was first seen.

To summarize I will say, (1) Inflict as little trauma to the eye as possible.

(2) Put a lubricating antiseptic in the eye following the operation.

(3) Bandage the eye without fail where a foreign body has been removed from the cornea.

DISCUSSION.

Dr. H. L. Arnold (Meridian): One or two points I would like to emphasize. First, that when you remove a foreign body from the eye you must have a good light; you must have a magnifying glass and a condensing lens, because you cannot do the work unless you see what you are doing.

In regard to the anaesthetic, we have found butyn, 2 per cent., more satisfactory than cocaine.

One point about fluorescein—most of us do not have fluorescein all the time, but if you use 1 per cent. mercurochrome in the eye you will get a stain that shows it up as well as fluorescein.

I think the point about the bandage is well taken. They will heal quicker and more satisfactorily if they are bandaged.

SOME OBSERVATIONS ON THE KAHN PRECIPITATION TEST.*

C. A. PALMERLEE,
JACKSON, MISS.

During the last four years a number of different articles dealing with a precipitin test for syphilis have appeared. That procedure developed by R. L. Kahn appears to give the most satisfactory results. In the fall of 1925 this method was adopted by the Michigan Department of Health, and the Army and Navy laboratories as the standard test for the diagnosis of syphilis.

The comparisons between the Wassermann tests and the Precipitin reactions covered in this report were made, by me, over a period of about three and a half years and are almost entirely from hospital cases. The Wasserman technique used was at first the U. S. Public Health Service method with ice box fixation, but in the main Kolmer's technique run with three antigens was used. The precipitin tests were run principally with Kahn's second method and at first under his personal observation. In all cases the precipitin tests were "read" independently and before the Wasserman technique was completed. The sera, being from hospital cases, were practically always fresh and only rarely showed hemolysis.

In as far as data regarding positive reactions was obtainable from the various physicians, cases were classified as follows:

†Lues I. Primary cases clinically positive or verified by the darkfield examination.

Number of positive reactions, 14.

Wasserman 4 plus and Kahn 4 plus	9
" 2 " " " 2 "	3
" 4 " " " 2 "	1
" 2 " " " 4 "	1

Lues II. Clinical cases of secondary syphilis.

Number of positive reactions, 27.

Wasserman 4 plus and Kahn 4 plus	27

Hereditary. Clinically diagnosed with in five cases the parents included in this list.

Number of positive reactions, 9.

Wasserman 4 plus and Kahn 4 plus	9

†For convenience in interpretation in this report three and four plus positive reactions are considered identical.

*From The Pathological Laboratory, Mississippi Baptist Hospital, Jackson, Mississippi.

Lues III. Cases giving a definite or suspicious history with some findings justifying a diagnosis of latent or tertiary syphilis.

Number of positive reactions, 175.

Wasserman	4	plus	and Kahn	4	plus		142
"	4	"	"	2	"		5
"	2	"	"	4	"		9
"	2	"	"	Negative			1
"	Negative	"	"	4	"		3
"	1 or 2	plus	and Kahn	1 or 2	plus		11
"	A. C.		and Kahn	4	plus		4

Cases in which no history was obtained.

Number of positive reactions, 70.

Wasserman	4	plus	and Kahn	4	plus		57
"	4	"	"	2	"		2
"	2	"	"	4	"		3
"	4	"	"	Negative			2
"	1 or 2	plus	and Kahn	1 or 2	plus		6

Cases selected while undergoing treatment.

Number of positive reactions, 124.

Wasserman	4	plus	and Kahn	4	plus		56
"	4	"	"	2	"		13
"	2	"	"	4	"		2
"	2	"	"	Negative			6
"	Negative	"	"	2	plus		2
"	1 or 2	plus	and Kahn	1 or 2	plus		37
"	4	plus	and Kahn	Negative			3
"	A. C.		and Kahn	4	plus		5

Total number of comparative tests run, 2828.

Wasserman and Kahn both negative	2402	85 %
Wasserman and Kahn both weakly or strongly positive	357	12.5%
Wasserman strongly positive and Kahn negative	5	0.2%
Wasserman negative and Kahn strongly positive	3	0.1%
Wasserman weakly positive and Kahn strongly positive	15	0.5%
Wasserman strongly positive and Kahn weakly positive	21	0.8%
Wasserman weakly positive and Kahn negative	7	0.3%
Wasserman negative and Kahn weakly positive	2	0.1%
Wasserman anti-complementary and Kahn positive	9	0.3%
Wasserman anti-complementary and Kahn negative	7	0.2%

CONCLUSIONS.

1. As observed in hospital cases the Kahn precipitin test and the Wasserman test probably check as closely as any two Wasserman systems.

2. A report can be given in an hour's time which is very important in emergencies.

3. It gives a report in anti-complementary Wassermans.

4. It gives a considerable satisfaction to the laboratorian in having an additional check on his Wasserman system.

5. It should be reported in connection with all Wasserman reports so that the clinician may have the opportunity of observing its accuracy in his own practice.

6. Essentials to the accuracy of the test are carefully standardized antigens, accurate technique, and a reasonable experience in reading the reactions.

A MILD EPIDEMIC OF JAUNDICE IN LOUISIANA.*†

JOHN H. MUSSER, M. D.,

AND

CHARLES J. MIANGOLARRA, M. D.,

NEW ORLEANS.

Acute infectious jaundice has been recognized for many years as an epidemic disease. A careful study was made of the distribution of the epidemics in the United States by Blumer‡ in 1923, who states that this disease, infectious jaundice, has occurred epidemically in every state in the Union except six, of which Louisiana is one. On account of the fact that epidemics have not been described in New Orleans or in Louisiana, we thought it might be of interest to record a mild epidemic which occurred, so far as we can determine, in the months of October and November, 1925. We have the record of only fourteen cases,

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*Read before the Orleans Parish Medical Society, May 10th, 1926.

†From the Department of Medicine, School of Medicine, Tulane University of Louisiana.

‡Blumer, George: Infectious Jaundice in the United States, a Summarized Report. Tr. Assn. Am. Phys., 1923, 38: 189.

but those cases all seemed to be of the type which has been described as infectious jaundice, in which the causative organism, whatever it may be, is transferred from one individual to another. The organism, as Blumer says, is unknown.

Epidemiological Studies. Some of the epidemics of jaundice which have occurred in this country have been extensively studied. While many of them have been found to be entirely a family outbreak, others have attained the dignity of a state-wide epidemic such as occurred in New York state in the fall of 1921 and 1922. Variations may occur between these two extremes, as an outbreak in an institution or in a county.

Etiology. Blumer's figures will be mentioned here because he has made an extensive study of the epidemics as they have occurred in different sections of the country. He has found that 72 per cent of all the outbreaks occurred during the fall and early winter months and only 6 per cent in the spring, while 10 per cent occurred during the summer.

The disease is essentially a disease of childhood or young adult life. Again, to quote Blumer's figures, it was found that 70 per cent of the patients in fifty epidemics he studied were children or young adults.

The disease is apparently spread by direct contact. It has been supposed that rats might be the carriers of the disease, but epidemics have occurred in this country where rats and other rodents do not live. The direct contact from individual to individual certainly has sufficient weight to explain this method of the propagation of the disease.

Pathogenesis. The explanation of the usual cases of mild jaundice is that there is a catarrh of the duodenum which occasions an ascending catarrh of the common duct, causing obstruction of the duct and the subsequent inability of the bile to pass through the usual canals. This is a theory that was advanced by Virchow many years ago and has been followed blindly since. In the very few cases of so-called catarrhal jaundice that have come to autopsy, there has been no catarrh of the common duct; but there were pathological changes which produced an obstruction of the bile capillaries secondary to injury of the liver cells, which were sufficient to explain the cause of the jaundice. Eppinger explains the jaundice by tears occurring in the bile capillary radicles, as a result of which and as a result of the primary necrosis of the liver cells from infection, there would be a pouring out of bile into the lymph canals, the bile consequently entering the general circulation and giving rise to jaundice. The theory of the origin of the disease as the result of an infection is substantiated by several factors, one or two of which might be accentuated, as the onset and the evidence of transference from individual to individual. Complete obstruction to the entrance of bile into the duodenum is rare in these cases, but would occur if a mucous plug was responsible for the obstructed common duct. As a result of the extensive studies that have been made in the etiology of jaundice it has been shown very definitely that the bile arises largely as a result of destruction of red cells. In a great many cases there is a conjoint injury to liver cells, but this destruction of liver cells is not essential to the production of jaundice.

The type of infectious jaundice which is a result of spirochetal involvement of the liver cells does not enter into the discussion here, as Wile's disease is a specific and definite entity, resembling somewhat infectious jaundice but caused by a specific spirochete, the *Leptospira icterohemorrhagiae*, which can be demonstrated in the blood and in the urine in cases in which this disease occurs. Furthermore, it is of interest to note that these cases are always very much more severe than infectious jaundice and may effect any age period.

Clinical Manifestations. Infectious jaundice varies considerably in its expression, but it is usually that of a mild infection. The onset is rather sudden and it will be seen from the history of the cases we have appended here that usually there is an associated gastro-intestinal disturbance. In practically all of our cases the gastro-intestinal symptoms and the jaundice were the only two outstanding features, although fever occurred apparently in a few of the cases, if we can judge from the malaise which occurred at the onset of the disease. Except for these two symptoms, and in here here we include also the symptoms that result from jaundice, there was nothing of practical moment. In none of the cases of which we have any accurate histories did clay colored stools occur at any time, though in severe cases the stools were lighter than normal and the urine was darker. Physical examination showed a swollen enlarged liver but except for this nothing of moment. The disease was very mild in the cases we observed and lasted about three weeks, when the jaundice gradually subsided. The cases were so mild that they did not require hospitalization with three exceptions. Two of these cases were on my ward and we did not detect any abnormality by any of the usual methods of testing patients with jaundice. The van den Bergh reaction showed a delayed reaction which was indicative of blood change rather than simple obstruction. Spirochetes were not found in the blood nor urine.

Case Reports. The patients were not all seen by us, but through the kindness of our colleagues we were able to collect these cases or from the word of mouth of the patients with regard to others who had jaundice in their immediate neighborhood or family. Dr. George Bel has told us of two cases that he has seen.

Case 1. Eyrie B., a young man 26 years of age, was admitted to Charity Hospital on the 14th of August with a history of having had jaundice for four days. Jaundice was associated with pain in his right side, weakness, constipation and loss of appetite. He remained in the hospital for a month without improvement and on account of the persistency of the jaundice it was thought that he had an obstruction of the common duct. When the abdomen was opened, it was found that the gall bladder, the cystic and the hepatic ducts were all negative. The liver was enlarged and the bile that was drained from the gall bladder was of normal color. In a few days he began to show improvement, which continued, and he was discharged from the hospital on the 20th of October. All the findings while at the hospital, including roentgen-ray examinations, urine examination, etc., were negative except those associated with retention of bile.

Case 2. Elbert B., a brother of Eyrie B., an elevator boy, 19 years of age, came to the medical clinic on the 10th of October. He said that he saw his brother in the hospital two weeks before and that he developed jaundice about ten days later. The yellow discoloration of the sclera was the first thing that called his attention to any abnormality. His appetite was good, there was no indigestion, bowels regular, did not feel badly in any way. Thinks that he had a slight fever for a couple of days at the time the jaundice appeared. He also called attention to the darkness of the urine, though stools show but little change. The other findings in his history were not of moment. The physical examination showed the yellow discoloration of the skin and of the sclera while the liver was swollen and palpable but not tender. By the 30th of October jaundice was nearly gone and by the 6th of November almost entirely gone.

Case 3. Adolph., a school boy, 14 years of age, says that three weeks before admission he helped a boy who was jaundiced mow the grass. A week later he also developed jaundice. He was not very sick and were it not for the fact that his eyes were so yellow his mother would not have brought him to the clinic on October 12, 1925. Urine was yellow, stools dark. His appetite was good, as was the digestion. Yellow discoloration of the sclera and slightly swollen liver were the only abnormalities detected in physical examination. By the 30th of October his jaundice was entirely gone.

Case 4. Richard S., student, age 19, was admitted to Charity Hospital November 19th because he was jaundiced. Aside from this jaundice he felt perfectly well and if he had not been scared by the yellowness of the skin and the eyes he would not have come to the hospital. When told of the mildness of the attack, he left the hospital that same day. Seen two weeks later, he was still jaundiced but was doing everything

that he had been accustomed to do before he was taken sick and had no complaints. From him we also got the history of a young man in his boarding house who also developed jaundice about ten days after his attack.

Case 5. Nick B., a man 40 years of age, was admitted to the Charity Hospital on the 30th of September, 1925, and was discharged the 3rd of November. This patient, on account of more intense jaundice and because he was the first case recognized by us, was kept in the hospital a longer period of time than the other patients. His jaundice had been existent for several weeks before he was admitted to the hospital and he had the usual symptoms of obstructive jaundice: loss of appetite, constipation, high colored stools, high colored urine, itching of the skin, head and so on. He also gave a history of having had syphilis five years ago, shortly after this being treated seven times with arsphenamin. During his stay in the hospital he had no fever. The total leucocytes were 12,250, of which 66 per cent were polymorphoneuclears. Van den Bergh reaction—delayed direct—10 units, immediate indirect 12 units. The Wassermann was negative. The urine showed no spirochetes on repeated examination. This patient was treated with duodenal drainage. Jaundice gradually subsided and he has has no further trouble. Roentgenograms were negative.

Case 6. Peter M., a small boy, aged 13, was admitted to Charity Hospital in October on account of jaundice. He had nausea, vomiting after meals and pain in the right upper part of his abdomen. Except for the jaundice and the swollen liver, physical and laboratory examinations were entirely negative. The jaundice apparently attained its maximum about five days after he came into the hospital and then gradually subsided. The only treatment of note was the non-surgical drainage of the gall bladder. The boy did not have any other members of his family attacked with jaundice nor did he know of anyone who had it.

Case 7. Miss V., a nurse at the Hotel Dieu, began to feel badly, had headache, nausea, anorexia during the last week of October which was followed by a rather severe jaundice which reached its height at the end of the first week of her illness and then gradually subsided. She was in bed for two weeks. Except for the jaundice, there was nothing of note in her illness. This patient was also treated with non-surgical drainage for two days. So far as we can determine, there was no history of contact nor did any other cases of jaundice follow in this institution.

Case 8. Dr. George Bel was good enough to give us the details of this case. Mary H., a school girl, aged 15 years, was taken sick in the last week of October, 1925, with loss of appetite, a temperature of 101°, abdominal pains with nausea and vomiting. Eyes, mucous membranes and skin were jaundiced. This jaundice reached its height in one week and the young lady was in good condition and up and around in two weeks. She was treated with Epsom salts. Dr. Bel tells us that this child gave a history of playing with two children who at the time she became ill were sick at home with "yellow jaundice."

Case 9. William E., a friend of Richard S. (Case 4), living in the same house with him, was attacked with jaundice about two weeks after Mr. S. At this time he complained of no other symptoms except the jaundice. Attack commenced a few days before November 26th and his jaundice had cleared up in about four weeks. During the entire attack he was up and around and never ceased carrying on his usual occupation. From the boarding house keeper of William E. we got a very interesting history; that her brother had had an attack of jaundice when he was at Lake Charles and shortly before she returned to New Orleans to open up a students' boarding house. Her brother was a young man about 22 years of age. This history is of particular interest because of the possibility that the boarding house keeper might have been a carrier of the hypothetical causative organism. She was in close contact with her brother when his attack of jaundice developed. A few days later she left for New Orleans and some weeks later two cases of jaundice developed in the boarding house of which she was the mistress. This woman also told us that during the latter part of the summer, to quote her own words, "there were dozens and dozens of cases of jaundice in and around Lake Charles."

Additional Data. The information given us by the boarding house keeper of Richard S. and William E. (Cases 4 and 9) led us to send a circular letter to the physicians of Lake Charles, a city of about 15,000 population, relative to the incidence of the disease in that neighborhood. Of the gentlemen who were kind enough to answer our letter, some had and some had not seen cases of jaundice in or in the vicinity of Lake Charles. Dr. L. A. Hebert wrote that he had seen in consultation mild cases of jaundice in and about Calcasieu Parish. Dr. W. C. Hayes had seen "several cases of acute jaundice." Dr. T. H. Wat-

kins wrote that he saw ten cases of jaundice and that the physicians from the surrounding towns had seen a few cases. "I believe that a liberal estimate of cases here would probably be forty or fifty." Dr. W. L. Fisher, of Lake Charles, said that "we had quite an epidemic about Iowa, La., this last summer and fall. I probably saw about 20 cases myself. These cases were of all ages—the first epidemic of jaundice I ever saw in 32 years of my practice." Dr. J. D. Tuten saw "six cases of an extremely mild type," and Dr. J. G. Martin wrote that Dr. Holcombe has had eight cases.

A case of jaundice of this type recently admitted to the Charity Hospital from Jeanerette, La., some 150 miles north of New Orleans, led us to write Dr. Joe Raphiel. He answered that he had seen seven cases in the spring and summer of 1925, three among his own children and four other cases in his practice. The jaundice occurred only among children, whose ages varied from one year to nine. The symptoms were very mild and cleared up in about ten days.

Summary. We have recounted here the history of nine cases of infectious jaundice occurring in New Orleans, which we either obtained from the patients who were under our observation or from medical colleagues. We have on record five other cases in which we were not able to get a detailed history. These fourteen cases all occurred about the time of the year (Fall) in which epidemic jaundice is likely to occur. In six of them we obtained a history of direct contact with some individual who had an attack of jaundice. Direct contact apparently played the most important role in the production of this mild epidemic, as there was no other etiological factor which we were able to develop or to trace which might have been responsible for the development of the disease.

In addition to these cases occurring in New Orleans, record is made of mild epidemics occurring elsewhere in Louisiana (Lake Charles and Jeanerette). It is highly probable that many other communities in Louisiana were also the seat of slight epidemics.

DISCUSSION.

Dr. Urban Maes: Dr. Musser was kind enough to spare me in his paper, but I recognize that one of the cases he refers to occurred on my service. The patient, a young man, was badly jaundiced, with a marked anorexia and other typical symptoms, and operation seemed indicated. Laparotomy revealed no gross pathology, and, concluding that the condition was one of catarrhal jaundice, I did a cholecystostomy. The gall-bladder was apparently perfectly normal, the cystic duct was not palpable, the liver showed no pathology, and there seemed no indication whatsoever for a more radical procedure. His immediate recovery was uneventful, but later he returned to the hospital complaining of gastric distress and a persistent pain in the upper right abdomen. A second laparotomy showed the gall-bladder embedded in a mass of adhesions; indeed I have never seen a more marked pericholecystic involvement. Prompt and apparently permanent recovery followed a cholecystectomy.

We have on record a fair number of cases which showed marked pericholecystic adhesions, probably the result of an infective cholecystitis following a previous cholecystostomy. In this particular case the gall-bladder was still functioning and contained yellow bile, but the extent of the adhesions made extirpation necessary.

I did not know of the existence of epidemic jaundice until Dr. Musser called it to my attention.

Dr. Chaille Jamison: I want to call attention of the Society to a case that was reported at one of the monthly meetings of the Mercy Hospital Staff. The case caused considerable comment and discussion at the time of the report.

The patient was admitted to the hospital from one of the ships by a first class diagnostician, who attended him during his stay at the hospital. The man was jaundiced; had no fever or pain. It looked like a simple case of catarrhal jaundice. He remained in the hospital simply because he had no other place to go. He developed no symptoms to disturb anyone for a week or ten days. He then developed, suddenly, delirium, and went into a coma. He presented a picture of acute yellow atrophy and died within two days. Unfortunately, he was not autopsied. Apparently, this was a case of acute yellow atrophy of the liver, following what we are in the habit of calling catarrhal jaundice.

SHALL THE GENERAL PRACTICE OF MEDICINE BE CONSIDERED A SPECIALTY.*

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ECRU, MISS.

In this day of highly developed specialization in all lines of endeavor, the title to this article is a very pertinent question.

Since the world seems to be demanding that men be experts or specialists in their particular lines, I am very much pleased to state that the question may easily be answered in the affirmative.

I do not wish to cast aspersions, or say anything that might in the least hinder the high class service given by the various specialists. But being a general practitioner myself I wish to do my bit in upholding the dignity of this special and very important branch of medicine, its wholesome traditions and lofty covenants as enunciated by our medical fathers, which has placed organized medicine on the high plane it now enjoys in the scheme of all established and orderly Governments, and has worked for the uplift of humanity wherever it may exist.

It is just a bit humiliating to be looked upon with an air of condescension by those who practice the limited specialties, they say by their attitudes that you are a necessary evil and must be tolerated by your superiors, of whom they are, some of them (not all of them) assuming an attitude of very exaggerated importance as if the whole scheme of things depended on them and their special branch.

The various specialists through their cunning strategems have taught the public, that if they have not had the services of one or more specialists, whatever may have been done for them is certainly not scientific. In this they are most probably correct for I will say without fear of successful contradiction, that the general practitioner if he has the proper training and perspective, is certainly the most highly developed specialist in the whole domain of medical practice.

He must know his stuff. He must be able to understand the human fancies and foibles, and make a therapeutic application that will lessen and cure diseases and drive away sorrows and woes. In fact, in addition to his academic training in the science of medicine, he must possess an especially refined diplomatic sense, and understand thoroughly the variations in human temperaments, and be able to control to an appreciable extent those temperamental varieties in a way that will institute in the individual a mental, moral and physical stability, so that his or her life will completely harmonize. Does this not require special study and a refined ability? Echo from your conscience, dear confreres, answers me almost audibly, yes.

There are certain diseases which produce definite disability, and which cannot be relieved by the surgeon's knife, neither can the radiologist or roentgenologist give them relief, nor can any of the various so-called specialists. In fact, they can only be relieved by the proper therapeutics, and humanizing and harmonizing influence of the general practitioner, who is himself a specialist of the highest order.

The surgeon, the microscopist, roentgenologist, urologist, gynecologist, and the various ologists, are very useful and have a very conspicuous place, but no one of them nor all of them as a unit can take the place of the general practitioner, who has made a special study of the pathological and functional disabilities of man as a whole. His range of knowledge covers a much wider field, and gives him a much clearer insight into the real needs of each individual patient, as a sick person and a human being all in one.

*Read before the Mississippi State Medical Association, Jackson, May 11-13, 1926.

In this connection let me quote an excerpt from the memoirs of the late Vice-President, Thos. R. Marshall, as follows: And yet there is just one regret of the passing of the old country doctor, that is with him the family physician is about to pass; he was the man who knew your peculiarities, your idiosyncrasies, and your life. He was as much bound up in your destiny as your minister or your lawyer. He was adviser, councillor, friend. It is nothing against science; nothing against these specialists; nothing against their accuracy, and it is not regret over the fees we pay; but I do sometimes long to have an old family doctor that could really find out what is the matter with me, without passing me down the line of from 15 to 20 experts.

Gentlemen, this is certainly an indictment, which is clearly in favor of the general practitioner, and coming from one so high in the councils of the nation should mean something.

If it be true that the general practitioner is passing, then we are certainly facing a tragedy, for as you gentlemen very well know, he is the bedrock, and cannot be dispensed with without seriously affecting the whole fabric of medicine.

I have no fight to make against the specialists, I am only asking that they treat us as their equal, which we are, and give us the same hearty co-operation, which they expect us to give them and which it is our duty to give, in the interest of humanity, and as brothers of the same craft.

Men in the present field of specialism, the majority of them live in the cold field of science. They can name all the bugs that the microscope knows, but they can't fill the place in the chair that may become vacant, beside my lone bedside to comfort my woes.

The medical group has a commercialized bearing where the case is reported by number or card, but they lack the soul touch of the general practitioner who holds every patient in tender regard.

No! The general practitioner is not passing, they shall not pass. For the loving Creator will ever impress the need, and in some way keep the torch of right and reason burning, to uphold the hands of a profession so important to suffering humanity.

I believe the time is coming, and in the near future, when the schools of medicine will particularly emphasize the importance of this special branch of medicine, and through it the practical application of science and human sympathy in a scientific way for the relief of the ailments of mankind.

We court research and new advances, but we must remember that we are parts of one stupendous whole and that it requires breadth of intellect not to take the part for the whole. I am not asking that we be placed above where we rightfully belong, but I am asking for the sake of right, that our brothers of the same fraternity help us establish and maintain our rightful sphere, for we are specialists in our field just as the surgeon, or any other branch is specialists, in their lines.

I maintain, and there are many who will bear me out in this, that General Practice is the most important branch of medicine, and anything that has a tendency to undermine and destroy its prestige and usefulness, certainly strikes at the fundamentals of medicine, and consequently endangers the whole structure.

Men should be loyal to their specialty, of course, but loyal first and always to medicine. For it would be foolish in the extreme to go to seed in a one-idea field.

In these days of super-specialism, it has almost become a reproach to be called a general practitioner, but we will not surrender our birthright as diagnosticians. The pendulum will surely swing where it

belongs, and we will be accorded the recognition that is justly ours. The general practitioner is the highest type of specialist, and his place is at the front, the one-idea specialist to the rear.

DISCUSSION.

Dr. O. N. Arrington (Brookhaven): I would like to thank the doctor for bringing this subject before us. As he said, we hear too much about specialists. Specialists we need, but the old-time practitioner of medicine and surgery must stay with us. He is the broadest and most liberal thinker in the world, and he is closest to the hearts of the people.

I enjoyed every word the doctor said and wish to express my appreciation of the paper.

Dr. R. C. Elmore (Durant): I enjoyed the doctor's paper, first, because I belong to that class known as general practitioners. One of the most illuminating treatises I have read along this line is an article by Dr. James B. Herrick of Chicago. You will find it in the February 2nd issue of the Journal of the American Medical Association. It was delivered before the Institute of Medicine in Chicago as his Presidential address and is entitled "The Clinician of the Future." When the chairman called for discussion I hesitated because I wanted to hear from some of the specialists. It may be the specialists are not awake to a realization of the readjustment, the transition that is taking place in the practice of medicine. Dr. Herrick showed plainly in this article that he is awake to this change, this transition, and he bespeaks a more cordial relationship between the specialist and general practitioner of the future along all lines—professional, financial and otherwise.

Personally, I have no grudge against the specialists; some of the best friends I have in the medical fraternity are specialists. I have no grudge whatever, but I do know there are conditions existing which are bound to be relieved.

A case in point: I live in a small town. I am called to see a case,—say this morning, which I think is possibly appendicitis or acute abdomen. I tell the patient I will come back later and make further examination and advise him what to do. Later I return and tell him that I think he has appendicitis and should go to a hospital. Then we start the machinery for getting him into the hospital,—from a small town, which takes two or three hours time, I possibly take him to the train in my car; telephone for a room and communicate with the surgeon. He arrives at the hospital, and the first thing he has to do is to pay $10 for the operating room fee; $5 for the anaesthetist; $3 for the laboratory fee; $5 a day for the room; $6 a day for a special nurse, and from $100 to $200 for the surgeon's fee. He comes back in about ten days after the operation, presumably all right, and he says: "Doc, I will pay you as soon as I can, but those fellows strapped me down there." Maybe my bill is only $5, and in two or three months he will come around and give me $1.20 and promise to pay the balance as soon as he can.

I have no grudge and no sore toes to exhibit, but I maintain these are conditions we have to meet, and there must be a readjustment all down the line.

Dr. R. M. Adams (Ripley): Certainly the greatest field for service confronts the general practitioner, if he will but visualize and demand the same high standard of equipment that the specialist does. But certainly there is no greater place for altruism than confronts the general practitioner. He certainly cannot be allured into this field of service because of its remunerations; he recognizes his limitations and he should appreciate and recognize the specialist in his sphere of activity. There should be no conflict. There is room for the very best that is in each of them, and they together should carry this great work of serving humanity to perfection. The general practitioner certainly cannot do surgery successfully and should not attempt it because it hinders him in his other very important activities. There are some things he should do and should recognize. He should have himself equipped at all times to take specimens for the technician, for the laboratory, and he should be equipped for emergencies when he cannot wait for the specialist. Every general practitioner should have antitoxin to take care of diphtheria that he may meet unexpectedly. He should be equipped to give antitoxin intravenously to save his extremely toxic cases of diphtheria. There is one place that many of us have fallen short and have not saved many of these little fellows who have died before they could absorb the antitoxin given intramuscularly. Any general practitioner should be able to do that in an emergency and save these little fellows. He should at all times have his culture tubes so there may be no delay in getting his report from the laboratory.

We should, as I say, demand the high standard of equipment as does the specialist, and in this way there certainly is a field of service that will challenge the very best that is in us. There is no greater place to serve humanity because he meets all classes of people, high and low, rich and poor, and serves them. He must be

widely informed, be able to take care of these various emergencies that spring up when he has to decide without the aid of the specialist and laboratory and determine what shall be done for the poor unfortunate. To me this is the greatest field, this field of the general practitioner, for real service to humanity and the display of altruism.

Dr. J. W. Lipscomb (Columbus): I have nothing new to add along this line, but a practical thought came to me as I sat there, and I want to acknowledge before all this bunch of distinguished citizens, physicians and surgeons, urologists and all other specialists, that I am a general practitioner and never have been anything else, and I have never regretted that I am a general practitioner. But the practical point that I want to bring out is this: We represent a great army, and we men in the general practice are the privates in the ranks. We might as well admit that. We do not wear gold braid and have the spectacular positions that the surgeon and the urologist and the other specialists must have. But the great generals and colonels and majors and all down the line when a battle has been won always say: "We did not do it; the men under us did it." All I ask is that when we refer a patient to these specialists that when he is discharged they tell him—I did not save you; I did my part, but if the man back yonder on the firing line had not referred you to me you would not have been saved. Some such feeling as this between the specialist and the general practitioner will be the salvation of the medical profession in the State of Mississippi.

Dr. Wm. L. Little (Wesson): I belong to the old school. I have been here long enough to appreciate the old family physician and at the same time to appreciate the specialist. We need the specialist, and we need the family physician —the man who has nerve, who is honest, who will go at all hours of night to minister to those in need; but we need the honest specialist, too. The doctor who is doing ear, nose and throat work, has enough to keep him busy all the time in this particular field. We need the x-ray man —we need the honest doctor in all these special lines of work, the physician who will treat the other fellow with some respect. I have sent some of my patients to specialists, and when they came back they had seen all kinds of equipment and had a bill as long as your arm—and that is all the relief they received. What we need is the specialist who will take the patient you send him and do his best to make a diagnosis, in an honorable way and treat the family physician with some degree of courtesy. Good fellowship should exist between the general practitioner and the specialist. We need them all, but we need honor and honesty.

Dr. G. W. F. Rembert (Jackson): I think there is no question that practically every specialist has come up from the ranks of the general practitioner. Someone has said that it takes about seven specialists to make a good general practitioner, and that certainly is true. The general practitioner is surely the greater of the two classes, and as one of the discussants said, the one to whom the honor is due when the battle is won.

There is only one point that I think should be always held before any man who is doing special work, and that is his great desire, his determination, his every effort to follow the Golden Rule as well as it is in his power to do, always realizing that the patient some physician is courteous enough to refer to him is primarily the ward of that physician. He is simply loaned to him, as it were, for the time being, no matter what may be the domain of the specialist, and as soon as his work will have been completed the patient reverts to the physician to whom he originally applied and under whose care he really belongs. I think if we would follow that as a guiding rule then whatever errors are made would be errors of judgment and not errors of intent.

Dr. J. A. Rayburn (closing): I appreciate the liberal discussion of this paper. I presented it as I did to elicit discussion and cause you to think. Some of my very best friends in the medical profession are specialists, and as I stated in the paper, we need the specialists.

The reason I stated the title as I did—"Shall the General Practice of Medicine Be Called a Specialty?" is because the public is coming to believe that they must have specialists when they get sick. It does not matter what the trouble is, they have to have a specialist, and specialists are springing up all over the country. We must have the general practitioner, and I plead that they be recognized as equals. I believe we are, and I believe the various schools of medicine should emphasize the importance of the general practice of medicine, and that men going out from the medical schools shall be equipped to do better general practice than we men are doing now.

DERCUM'S METHOD OF TREATING NEUROSYPHILIS.*

WITH REPORT OF CASES.

D. L. KERLIN, M. D.,

SHREVEPORT, LA.

Before presenting to you some of the cases of neuro-syphilis which we have on record, and our method of treatment, I am going to give you some important points as brought out by various authors in the use of the most popular methods of treating neuro-syphilis. Judging from the literature and the report of various authors who have experimented extensively with it, tryparsmid is a drug of choice in treating neurosyphilis. Although it has not been released to the profession in general, it will be, no doubt, in the future, and to mention some of the important facts concerning its use as established by various clinicians will not be premature.

Tryparsmid contains 25.32 percent arsenic and its characteristics as described by Brown and Pierce are as follows:

(1). Comparative freedom from harmful effects.

(2). A moderate degree of treponemacidal action.

(3). An unusually high penetrability.

(4). A remarkable power of reinforcing the processes of natural resistance and of promoting recuperation.

Lorenz and Lowenhert in a report of a hundred and eighty-five cases give the following conclusions in regard to the use of tryparsmid in neuro-syphilis:

(1). Tryparsmid and mercurial salicylate are therapeutically effective in early paresis, meningovascular syphilis and to a lesser degree in taboparesis, tabes and in advanced paresis.

(2). The beneficial clinical results precede the improvement in the serology.

(3). Definite paretic psychosis disappears as the result of treatment.

(4). The mental restoration has persisted over a two-year period.

(5). Visual disturbances occurred in seven percent of the total number treated.

(6). In tabes and taboparseis twenty-three percent of the cases treated showed visual disturbances.

(7). Of thirteen cases showing amblyopia during tryparsmid therapy, all but one cleared up after the withdrawal of the drug. Twelve of these cases were subsequently treated with tryparsmide without further eye disturbances.

(8). A complete ophthalmological examination as to fundi acuity and visual fields should be done upon every case before using the drug.

Tryparsmid is given in doses of three grams weekly for eight to sixteen injections. Injections of mercurial salicylate intramuscularly are either spaced in between the tryparsmid injections or given after the course of tryparsmid is completed. After a rest period, this course of treatment can be repeated if necessary.

The Swift Ellis plan of treatment has many warm advocates and its technique as used by Fordyce is as follows: First, the usual injection of arsphenamine is given. Second, one-half hour later, fifty cc. of blood is withdrawn from the vein. This is placed on ice for four hours. Third, the blood is centrifuged and the serum is piped off under aseptic precautions. Fourth, this serum is inactivated by incubating at fifty-six degrees centigrade for one hour. The object of this is to render inactive any bacteria that may be present in the blood stream. Fifth, a spinal puncture is done, the stilet is withdrawn and at the same time the percolator is attached to the needle by a piece of rubber tubing six inches in length. By holding the percolator below the level of the needle, the spinal fluid is allowed to flow into it. Then, taking the inactivated blood serum, it is mixed with an equal amount of spinal fluid and then allowed to flow through the needle by raising the percolator. Enough serum mixed with the spinal fluid is allowed to flow through the needle to replace the same

*Read before the Louisiana State Medical Society, Monroe, April 15-17, 1926.

amount of spinal fluid withdrawn. The number of treatments vary with the severity of the infection. Fifteen to twenty-five injections is the average course.

We have used the Swift Ellis method of treatment, but have not been pleased with it. We now use Dercum's method exclusively which consists of weekly injections of arsphenamine followed by spinal drainage. Following spinal drainage, on an average of three times in each case, we inject bichloride of mercury from one-seventy-fifth to one ninetieth of a grain intraspinally. In addition, we give daily from one-twelfth to one-twenty-fourth of a grain of bichloride intravenously. When the veins become sclerosed and we can no longer inject the bichloride, we use weekly injections of potassium bismuth tartrate intramuscularly, spaced in between the arsphenamine injections. This treatment is continued until we get a negative spinal fluid Wassermann, and then bismuth is continued for at least ten injections. A spinal fluid analysis is done within three months and again in six months after treatment is stopped. If found positive, further treatment is given.

Before giving you the results of our use of this method in a few picked cases, I am going to give you some data on the serological findings in the various types of neuro-syphilis:

I. Paresis and taboparesis:

1. Wassermann reaction in blood positive. (100%)

2. Globulin positive. (95%)

3. Lymphocytosis. (95%)

4. Wassermann spinal fluid.

a. Positive in 85-90 per cent with original method and two-tenths cc. of fluid.

b. Positive in 100 per cent with larger quantities of fluid.

II. Tabes and cerebrospinal syphilis.

1. Wassermann reaction on blood positive in tabes 60-70 per cent and in cerebro-spinal syphilis 80-90 per cent.

2. Globulin reaction positive. (90%)

3. Lymphocytosis positive. (90%)

4. Wassermann on spinal fluid.

a. Positive in 5-10 per cent with original method and two-tenths cc. fluid.

b. Positive in 5-10 per cent with larger quantities of fluid.

Case I. Taboparesis.

White female, age forty-five years. Entered Sanitarium April 10, 1924.

Family history: Unimportant.

Past history: Unimportant with the exception of an ectopic pregnancy for which she was operated on in 1922.

Menstrual history: Negative, no miscarriages nor still births.

Present history: Began four years ago when patient began to feel irritable, depressed moods, headaches frequently and intestinal disturbances. While driving car on several occasions, she would suddenly feel faint with a sensation of blindness and would have to stop the car until the attack had subsided. Recently, memory has been defective, marked muscular weakness and insomnia.

Neurological examination: Rhomberg positive, static ataxia, pupillary reflexes equal, regular in outline, react sluggishly to light and accommodation. Speech and gait normal. Cranial nerves intact. Slight incoordination in upper extremities, deep flexes, upper extremities normal. Diminished bilaterally lower extremities. Sensation areas of anaesthesia and hyperaesthesia over body. Superficial reflexes normal. Circulatory, respiratory and gastro-intestinal system negative.

Laboratory reports: Urine negative. Blood Wassermann four plus. Spinal fluid: cell count forty-five, globulin increased, sugar sixty-five mgms. per one hundred cc. of blood. Wassermann four plus in all antigens in smallest dilutions. Colloidal gold curve 5555443300 paretric curve.

Spinal fluid analysis after five weeks' treatment: Cell count eighty, globulin increased twenty-eight mgms. per one hundred cc. Sugar increased one hundred and ten mgm. per one hundred cc. Wassermann, Kolmer antigen four plus. Cholesterinized antigen two plus. Noguchi antigen two plus. Colloidal gold curve 555534400.

Spinal fluid analysis after four months' treatment: Cell count three, globulin sixteen mgm. per one hundred cc. Sugar sixty-five mgms. per one hundred cc. Wassermann one plus in all antigens. Colloidal gold curve 4444200000.

Spinal fluid analysis six months after cessation of treatment: Cell count five, globulin fifteen mgms. per one hundred cc. Sugar sixty-five mgms. per one hundred cc. Wassermann negative in all antigens. Colloidal gold curve 144340000.

Case II. Paresis.

White male, age sixty-two years. Entered Sanitarium September 8, 1923.

Family history: Unimportant.

Past history: In 1921 he had an attack of frequency of urination with burning sensation. Was told by his physician that he had nephritis, but patient refused treatment.

Venereal history: A chancre thirty years ago, at thirty-two years of age. No treatment at that time.

Present history: Two weeks previous to the time that we saw him, patient's symptoms were predominantly mental. Memory became defective, delusions of persecution, especially concerning all women, whom he thought were trying to harm him; even his wife. Both visual and auditory hallucinations were present. His wife stated that he had been in failing health for the past six months; being very suspicious, irritable and forgetful.

Neurological examination: Rhomberg positive. Pupils irregular in outline, unequal, right larger than left, react to light and accommodation sluggishly. Marked arcus sensilis consensual and cilio-spinal reflexes present. Speech slurring. Slight incoordination both upper extremities. Tremor of both tongue and upper extremities. Deep reflexes exaggerated, slightly more on left side. Sensation normal. Babinski bilateral, more marked on left. Circulatory, respiratory and gastro-intestinal systems negative.

Laboratory reports: Urine specific gravity 1.032 occasional hyaline and granular cast. Blood chemistry creatinin 2.3 mgms. per one hundred cc. blood. Uric acid 1.5 mgms. per one hundred cc. blood. Urea 25 mgms. per one hundred cc. blood. Blood Wassermann negative. Provocative blood Wassermann after two weeks on mixed treatment showed three plus in Kolmer antigen. Spinal fluid: four plus in cholesterinized and Kolmer antigens and negative in Noguchi in dilutions above two tenths cc. Cell count 210, globulin increased, sugar normal. Colloidal gold curve 0055555432100.

Spinal fluid analysis after one month's treatment: Cell count 30. Globulin normal. Wassermann negative. Collodial gold curve 1333000000.

Spinal fluid analysis after two and a half months' treatment: Negative in every respect, including the colloidal gold curve.

Case III. Cerebro-spinal syphilis. (Meningo-vascular Type.)

White female, age twenty years. Entered Sanitarium November 11, 1924.

Family history: Unimportant.

Past history: Removal of tonsils and adenoids when twelve years of age. Patient of a very nervous temperament, suffered with indigestion for the past eight years. Menstruates regularly; however, suffers with fainting attacks at time of menstruation.

Venereal history: Patient has been treated for syphilis for past two years. Up to present date patient has received twenty-two injections of salvarsan and eight injections of mercury, also mixed treatment. Blood Wassermann was positive up to July, 1924, when a negative report was received and treatment stopped.

Present history: Patient complains of a peculiar pressing sensation on top of head which sensation she also experienced for one month in 1923. It returned the last time in January, 1924, following the sixth injection of salvarsan, and has continued to present date, November, 1924. Has a tendency to worry quite a bit, very anxious over her condition, with quite some social conflict.

Neurological examination: Rhomberg negative. Pupils equal, regular in outline, react to light, accommodation. Speech and gait normal. Deep reflexes exaggerated all over. Sensations normal. Superficial reflexes normal. Circulatory, respiratory and gastro-intestinal systems negative.

Laboratory reports: Urine negative. Blood Wassermann one plus in all antigens. Spinal fluid analysis: Cell count 270, Globulin 21 mgms. per one hundred cc., sugar 75 mgms. per one hundred cc., and Wassermann negative in all antigens. Colloidal gold curve 4441000000.

Spinal fluid analysis after six weeks' treatment: Cell count 35, globulin 15 mgms. per one hundred cc., sugar 65 mgms. per one hundred cc., Wassermann negative. Colloidal gold curve 5544332100. Patient is still under observation and is to have a spinal fluid analysis six months after cessation of treatment.

Case IV. Spinal syphilis. (Vascular type of cervical cord.)

White male, age twenty-five years. Entered Sanitarium January 28, 1925.

Both family and past history unimportant.

Venereal history: Gonnorrhea in 1920. Denies having had a chancre.

Present illness: Began with pain in left arm in May, 1924. In August, 1924, noticed that left arm and shoulder was smaller than the right. Consulted a physician but refused spinal puncture at that time. Remission of symptoms at this time for a month's duration, then symptoms returned, and arm and shoulder became progressively weaker and more painful.

Neurological examination: Rhomberg negative. Pupils equal, regular in outline, react to light and accommodation. Speech and gait normal. Cranial nerves intact, no tremors, slight incoordination of left upper extremity. Deep reflexes. Diminished left biceps and extensor, otherwise negative. Grip diminished in left hand. Sensation normal. Superficial reflexes normal. Circulatory, respiratory and gastro-intestinal systems negative.

Laboratory reports: Urine negative. Blood Wassermann negative. Spinal fluid: cell count 12 globulin 18 mgms. per one hundred cc., sugar 60 mgms. per one hundred cc., Wassermann 4 plus in .6 and .8 cc. dilution in Kolmer and cholesterinized antigens. Negative in Noguchi antigen. Colloidal gold curve 001130000.

Spinal fluid report after one month's treatment: Cell count 5, globulin 16 mgms. per one hundred cc., sugar 65 mgms. per one hundred cc., Wassermann negative in all antigens. Colloidal gold curve 0000000000.

Spinal fluid report after six weeks' treatment: Cell count 15, globulin 12 mgms. per one hundred cc., sugar 60 mgms. per one hundred cc., Wassermann negative in all antigens. Colloidal gold curve 0000000000.

CONCLUSIONS.

No. 1. Neoarsphenamine combined with spinal drainage and reinforced with mercury both intraspinally and intravenously gives satisfactory results in the treatment of early cases of neuro-syphilis.

No. 2. When cases do not respond to neoarsphenamine or salvarsan, they often will respond satisfactorily to weekly intramuscular injections of potassium bismuth tartrate with butyn.

No. 3. We have no set rule as to how much treatment should be given nor is any one specific drug used, but try to adapt the treatment to the needs of the patient until a negative spinal fluid Wassermann is obtained.

No. 4. When a negative spinal fluid Wassermann is obtained, no case of neuro-syphilis should be dismissed as cured, the necessity of further observation should be impressed upon the patient, also analysis of spinal fluid at three and six months intervals after cessation of active treatment.

No. 5. We find that in late cases of neuro-syphilis when the total protein in the spinal fluid exceeds 40 mgms. per one hundred cc. of fluid, that clinically we can improve these patients for a time but not serologically.

No. 6. A bad prognosis is given in these cases in direct proportion to the excess of total protein in the spinal fluid, the standard being 40 mgms. per one hundred cc. of fluid.

No. 7. Dread of spinal puncture is cut to a minimum in these cases by using a small calibre needle and thoroughly anesthetizing with four percent novocain solution.

DISCUSSION.

Dr. L. L. Cazenavette (New Orleans): I think Dr. Kerlin struck a very important note when he spoke of the use of tryparsamid in the treatment of neuro-syphilis. This drug is now capable of being obtained by any one. It has now been released for some little while, but before it was released to the use of the general profession it was kept under observation for a good many years. It was made by Powers, Wightman & Company, I believe, and was under the supervision of the Rockefeller Institute. Some of our institutions were privileged in receiving a certain amount of tryparsamid for the use in well studied cases of paresis.

The amount of the drug to be used is usually one gram to every fifty pounds of body weight. The drug when first used was used in much larger doses, three and four sometimes five grams, and there resulted quite severe reactions, especially the reactions about the optic nerve, etc. But I believe that if we are a little conservative in the amount of the drug to be used we are going to prevent a great many ill effects of the preparation.

I don't know that paresis can be cured any more than a well marked case of tuberculosis can be cured. The case may be improved and kept under pretty well for a great many years. And so it is with paresis, it is difficult to say when a case is

cured. But the point I want to make is this, that in early cases of paresis there is no doubt in my mind that tryparsamid will do more good than any other preparation I know of. Of course, in the very advanced cases possibly it is very difficult to overcome the bad effects or ill effects of the spirochete on the brain cells themselves. But in early cases where you have your blood picture, when you have your spinal picture and everything detecting an undoubted beginning of paresis, I believe that the drug is of great value. Various treatments of synthetical preparations advise the need of vomiting at times. I know that in many cases tryparsamid has been given before meals or after meals, and in one case it was given the patient during his meals to test the effect and it had absolutely no bad effect. So in that respect I believe we should feel our way through and use a little bit more of this drug than we have in the past. I think it is a very important subject and we all know what becomes of these unfortunates if we don't do something for them. I feel it is our duty to use that particular drug in the early cases of paresis.

Dr. Kerlin (in closing): I wish to thank Dr. Cazenavette for the discussion, and in closing there is one point I want to stress: that is the fact that we treated neuro-syphilis for quite a few years without any definite standard on which to make our prognosis. Recently there has been developed a laboratory technic of determining the total quantity of protein in the spinal fluid. The normal standard of total protein in the spinal fluid is forty milligrams per hundred cc. of blood. We find that in direct proportion to the amount of protein increased above forty milligrams to 100 cc. the worse the prognosis. We just started using it and I can't say it is absolutely dependable. But say, for instance, if the protein is sixty milligrams per 100 cc. or seventy or eighty, we nearly always pronounce the patient incurable. If it runs around forty-five or fifty, the chance is better. If it doesn't exceed forty the chances are good to put the patient on his feet. (Applause.)

COLOR ACUITY, RECENT STUDIES WITH THE TEST.*

M. EARLE BROWN, M. D.

NEW ORLEANS.

Believing it to be of equal importance to general practitioners, medical men, and surgeons as well as oto-laryngologists and ophthalmologists, I propose to delve into the ever old and always new subject of Headaches, so well defined by Forcheimer, who states: "It is the most difficult symptom to treat, for the reason that the diagnosis as to its cause is most difficult, and the causes are very numerous." Among the many etiological factors, neurasthenia, hysteria, intestinal intoxication, chronic constipation, toxic substances as a result of faulty metabolism, diabetic or nephritic, chronic intoxications, lead, carbon dioxide, or nicotine, malaria, syphilis, and the anemias represent the class of general diseases of which headache is a symptom.

Butler describes the character of pain as follows: Sharp lancinating pain, paroxysmal pain, as characteristic of neuralgia. Pulsating or throbbing headache if unilateral, and in connection with vaso-motor disturbances, is indicative of migrane or hemicrania. Dull, heavy, diffused headache, is found in gastro-intestinal and febrile diseases of infectious origin; binding, pressing or squeezng headache is found in neurasthenic individuals. Hot burning sore headaches are associated with rheumatism and anemia. Sharp and boring head pains are typical of epilepsy and hysteria.

One can readily understand why such an arrangement of symptoms can be of little value in the diagnosis of diseases producing headache, because they are confusing and the ordinary patient does not possess sufficient intelligence to describe such headaches.

When examining such patients, if you will place them 20 feet from a test object of Red 2 mm. in diameter and require them to determine the color at that distance, you will find that only patients with normal vision can do so, therefore we must remember that persons with normal vision can recognize a Red test object 2 mm. in diameter, and a Green one 5 mm. in diameter, and a Blue one 7 mm. in diameter, and patients who cannot do so have defective vision.

*Read before the Orleans Parish Medical Society, May 24th, 1926.

It must be remembered that color recognition is lost before visual perception; in other words, patients whose visual acuity is 20/20 may have defective vision.

Color acuity is diminished in the diseases just mentioned only when the optic nerve is involved from an invasion of toxic substances with the exception of neurasthenia, which is a result of ocular fatigue and not a constant symptom.

Fuchs states: "Apart from pain which radiates from the eye to the head actual headache may also emanate from the eyes even when the latter are not really diseased, but simply subjected to undue strain as in ametropia. The color acuity test is of great value in determining the cause of headaches emanating from the eyes, especially where there are no external manifestations and the manifest vision according to Snellins test type is 20/20, this is particularly true in prodromal glaucoma where there are no objective lesions in the eye at the time of examination, the color acuity test showed a diminished color acuity for Red 18/20.

There is another type of headache frequently overlooked which has its etiology in the sphenoid and described in detail in Schluder's book, patients describe this type of headache as one originating in the eye, then radiating to the temple, then to the mastoid region and behind the head to the nape of the neck, the pain distribution is of course due to irritation or pressure upon Meckels ganglia. In this type of headache central vision was always 20/20, but the color acuity test showed diminished color acuity for Red as low as 1/20, and for Green as low as 5/20, Blue was not generally affected; the diagnosis of chronic hyperplastic sphenoiditis was made upon 27 cases using the color acuity test. How many of you gentlemen consider headache as an early symptom leading to blindness? So important is this symptom that one may consider every case of chronic headache whose etiology is undetermined to be one of a potential blindness.

Do we not know that headache is a constant symptom in the toxemias and do not the toxemias cause visual loss from involvement of the optic nerve and blindness from the atrophies that follow? is not headache a constant symptom in sinus diseases and is not the visual pathway invaded in most cases of ethmoiditis and sphenoiditis with loss of vision sometimes due to pressure upon the optic nerve and other times by extension, then is it not of the utmost importance to determine whether the visual pathway has been invaded and where?

The color acuity test will determine whether the visual pathway has been invaded as diminished color acuity is the earliest symptom of defective vision, excepting of course errors of refraction.

DISCUSSION.

Dr. Chas. A. Bahn: Dr. Brown's investigations on the relationship existing between central color vision in general and ocular disease are of interest because this is one of the important but unsettled problems of ophthalmology.

Diminished color vision acuity is an important and constant symptom in some of the toxic amblyopias of which tobacco and alcohol are the most frequent examples. In diminished illumination, as night blindness, it is commonly seen in retinitis pigmentosa, retinitis punctata, albescens, and xerophthalmia. In quite a few other diseases and degenerations, most of which Dr. Brown has mentioned diminished central color vision in the form of central scotoma are sometimes seen with varying frequency and intensity. Changes in the indirect color vision in the form of peripheral field contractions are more easily measured, better understood and generally speaking are of greater diagnostic importance.

Unfortunately no practical quantitive test for central color vision has yet been devised, which is not surprising when one considers the difficulties to be overcome. Central color vision varies normally with training, with illumination intensity, with color saturation, as well as with refractive, percipient, as well as with other factors. Approximately 5-10% of males have congenital defective color vision. Of its variations in diseases we know relatively little.

A practical quantative central color test would be of great importance in the regulation of automobile drivers who with colored signals and congested traffic have relatively greater responsibility for human life than locomotive engineers.

Generally speaking defective central color vision from a practical standpoint can hardly be considered a reasonably accurate means of diagnosis by the general physician between local and general ocular manifestations of disease.

I hope that Dr. Brown will continue his investigation on this interesting and important subject and help ophthalmology solve one of its most interesting and difficult problems.

Dr. M. Earle Brown (closing): I wish to thank Dr. Bahn for his words of encouragement. I will continue studies along this same line.

PYELITIS IN CHILDREN.*

G. Y. GILLESPIE, M. D.,

GREENWOOD, MISS.

The clinical entity, pyelitis, is justly due important consideration as one of the common, unrecognized causes of fever in infants and children. An acute tonsillitis, an early broncho-pneumonia, an otitis media, each has symptoms characteristic or suggestive of its localization, but the symptom-complex of pyelitis, mild or severe in character, inconstant in its manifestation, rarely suggests the localization of the trouble, and is often and easily overlooked.

We will here use the term pyelitis in a rather general sense, for although the majority of infections of the urinary tract in infants and children are most probably confined about the kidney pelvis; cystitis, pyelonephritis, renal calculi, kidney abscess, and pyelitis, all give very similar symptoms and clinical findings by our present methods of study and examination. It is no easy matter to definitely picture the pathological lesion in an infection of the urinary tract. Investigators in their most painstaking work have experienced great difficulty in collecting knowledge of the true pathology of this condition. Pyelitis in itself is not often a fatal condition, and although numerous autopsies have been performed where pyelitis was a complicating factor in the cause of death, little definite knowledge has been gained. Laboratory experimentation with animals, has furnished the most valuable information as to the pathology, and has led to the rather general adoption of the three routes of infection and the two types of pathological lesions. Helmholtz has been able to produce pyelitis in animals by the intravenous injection of live bacteria, demonstrating the localization of the bacteria first in the papillae and in the capillaries of the submucosa of the pelvis of the kidney. If the mucosa is involved it is by continuity of tissue, the infection spreading from the submucosa, rather than being excreted into the pelvis of the kidney and then attacking the mucous lining. Other investigators have injected live bacteria in the bladder, and have demonstrated the infection travels by way of the lymphatics of the submucosa around the ureters and the pelvis. Still others during their cystoscopic examinations have seen regurgitation of urine from the bladder into the ureters, carrying infection to the mucous membrane of the ureter or pelvis of the kidney. Hence we have the three generally discussed routes of infection, viz: haematogenous infection, involving the capillaries of the pelvis and peripelvic tissue, lymphogenous infection ascending through the lymphatics around the ureters, and ureterogenous infection ascending through the ureters involving the mucous lining. Likewise we differentiate two types of pathological lesions; inflammation of the submucosa and the peripelvic tissue, and inflammation of the mucous membrane.

Pyelitis is almost invariably due to infection by colon bacilli. Pyogenic cocci when found usually means infection of the kidney substance which leads to the formation of multiple small abscesses. The fact

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has been established that pyelitis in infancy and childhood is often associated with or secondary to infections of the upper respiratory tract, the digestive tract, or some other intercurrent infection, but the relationship of the infection is still a matter interesting the attention of investigators. Even where pyelitis is present with, or a sequellae to other infections, it is not due to the organism causing the other infection, but in practically all cases colon bacilli are the only organisms that can be isolated from the urine specimen. Certain investigators have advanced the theory that the organisms causing the other infections may have attacked the kidney first, but were rapidly overpowered by the secondary invader, colon bacilli. Helmholtz and Milliken have demonstrated in experiments there is no basis for proof that the outside infection has a specific action, but it probably produces a general lowering of resistance of the urinary tract to colon bacilli and gives them an opportunity to exercise a pathogenic activity. Practically all authorities agree that normally, bacteria are not present in the urine of the kidney or bladder, but it is not an uncommon experience to find many colon bacilli in the urine of children that present no symptoms and are apparently normal in health. Consequently it is logical to assume that pyelitis, occurring as a complication of other infections, is due to a lowered resistance of the urinary tract, allowing the inhabitant, colon bacilli, to produce pathological lesions. Pyelitis occurs more frequently in children under two years of age, and the female sex is more frequently infected than the male. The younger the infant, however, the higher percentage of males that are infected. It is not an uncommon thing to find a very young infant suffering with pyelitis.

There is probably no acute infection in children that produces such a variety of symptoms, or shows so many degrees of severity as does pyelitis. The predominant and most constant symptom is fever, very variable and irregular, and without discoverable cause upon physical examination. The severity of the infection may be such as to produce convulsions, cyanosis, extremely high and variable fever with rigors and colliquative sweats and profound prostration, or it may be so slight as to produce palor, restlessness, anorexia, drowsiness, and a low grade fever with no symptoms suggestive of the urinary tract being the localization of the lesion. Urinary disturbances as a general rule are not characteristic, but not infrequently, painful and frequent micturition are predominant symptoms. The condition may be ushered in by digestive disturbances as vomiting and diarrhea, the passage of several greenish, foul smelling stools, and high fever. The rigors, high irregular fever, cyanosis, convulsions and prostration, all symptoms of an acute pyelitis, are not uncommonly mistaken for malarial infection and treatment instituted which is more often a detriment than an aid to the patient.

The diagnosis of this not rare but frequently overlooked infection, is largely dependent upon microscopical examination of the urine, finding pus and bacteria in varying quantity. No examination of a sick baby with an obscure infection has been completed until a specimen of its urine has been subjected to a microscopical examination. Pus may not be present in every specimen of urine sufficient to make a diagnosis of pyelitis. In fact, a few pus cells may be found in the urine of healthy babies, especially females, consequently it has been necessary to adopt some standard whereby we may say pus cells are significant of pyelitis. Experience has shown that when the urine contains pus in sufficient quantity to give over five pus cells to every low power field in the uncentrifugalized specimen, and especially if these cells are grouped together in little clumps, infection somewhere along the urinary tract undoubtedly exists. The presence of pus cells in the urine of female

babies may be due to an unsuspected vaginitis, but by means of a catheterized specimen the diagnosis of pyelitis can be proven, and in case of doubt, one should not hesitate to subject his patient to this procedure. Pyelitis may exist for days without the appearance of pus in the urine, but in such cases colon bacilli in quantities can be found by microscopical examination. Often when the temperature is high, the symptoms severe, and the patient quite ill, there will be little or no pus, but coincident with a fall in temperature and mitigation of the toxic symptoms, there will be a flood of pus cells in the urine. One cannot be too careful in his thoroughness of a physical and clinical examination of children, and where pyelitis is found not satisfied until he has proven whether it is a primary infection, or secondary to some other infection. One of the most tricky things we have to deal with in clinical medicine is undoubtedly the fact that pyelitis is so often a secondary infection. A child may have an attack of pyelitis and apparently be cured, but let it develop an acute tonsillitis, an otitis media, or any other infection, and it is quite likely there will be a flare up of the pyelitis.

The course of prognosis of this infection is as variable as its modes of onset or clinical symptoms. In most instances it is a self-limited trouble which may disappear almost as rapidly as it appeared. It may be so severe as to make the prognosis seem very unfavorable and then go to a sudden termination as if by crisis. Then again it may be moderately severe but persist even after the most thorough and painstaking treatment. The pus and bacteria may be present in the urine even after all symptoms have disappeared. Most valuable information as to prognosis can be gained by making kidney function tests, to determine between pyelitis with or without renal involvement, and thereby differentiate the severe from the mild type of the disease. Experience has shown that a patient once affected has a strong tendency to recurrence.

Treatment of this condition has brought forward varied discussions as to the efficacy of many drugs, but only a few have stood the test of time. It is now a generally accepted fact that alkalinization of the urine and copious administration of water furnishes the most brilliant results in the therapeutic application of drug treatment in pyelitis. The question naturally arises whether alkalinization is merely a means of increasing urinary output and flushing the passages or whether it has a definite specific effect. It is reasonable to suppose that alkalies should effect a favorable influence in pyelitis. We know that phagocytosis is inhibited in acid and activated in alkali medium, and as phagocytic activity is a most important factor of body resistance in clearing up any infection, anything to increase it should be of value in pyelitis. Again we know that the toxic symptoms in pyelitis are very largely due to retained pus in the kidney pelvis, and as pus is more soluble in alkaline than in acid solution, this gives up a plausible reason for the good therapeutic effects of alkali administration. Potassium or sodium citrate are the drugs most frequently used to render the urine alkaline. Some claim the sodium salt is superior, due to the fact that it is less irritating to the stomach, and can be given in much larger doses without danger of toxic symptoms. In some cases it is necessary to give very large doses to get strong alkaline reaction of the urine. Sodium bicarbonate is a very useful drug to help render the urine alkaline. Helmholtz in a series of experiments as to the efficacy of the common urinary antiseptics in producing a pus free and sterile urine in pyelitis, found that urotropin gave very striking results over all other drugs used. He has shown that this drug can be administered in double or triple the dose ordinarily advised without damage to the kidney, provided the fluid intake is proportionately increased. In order to cause the

formaldehyde, which exerts the antiseptic effect, to be liberated from the urotropin, there must be an acid concentration of the urine. To render the urine acid, small doses of ammonium chloride, or full doses of acid sodium phosphate should be given. Various other drugs as salol, acriflavine, hexylresorcinol, mercurochrome, etc., are of definite therapeutic value in the hands of some clinicians, but it has been the experience of most men, that if after through and persistent treatment with alkalies, alternating with urotropin, the pus and bacteria persist, the case is beyond the realm of the general practitioner, and it is wise that it should be referred to the urologist. However, the urological treatment of infants and children is not only an extremely drastic procedure, but very few specialists have thus far successfully practiced cystoscopy and ureteral irrigations on them, and due to the difficulties in the technic, it will only be resorted to in the most obstinate cases.

Therefore, in the treatment of pyelitis in children, put your patient on sufficient size doses of potassium or sodium citrate to render the urine alkaline and keep it that way for several days. The reaction should be checked by frequent examinations with litmus paper, and as soon as alkaline the dosage can be reduced. If the symptoms do not disappear or the urine does not clear up in a few days, change to urotropin, ten to fifteen grains with ammonium chloride, two to three grains, or acid sodium phosphate, ten to fifteen grains, every four hours. Alternate the two treatments about every ten days, guarding your dosage of drugs by the symptoms and the reaction of the urine. Symptomatic treatment, of course, is indicated as symptoms arise. Hydrotherapy "internally, externally and eternally" for the hyperpyrexia and to promote diuresis, thorough evacuation of the intestinal tract, bland but nutritious diet. Milk, of course, is not a satisfactory diet where the temperature is high. The cereal gruels and fruit juices will prove more satisfactory. There are cases of pyelitis secondary to foci of infection, or malnutrition, where no drug therapy will be effective until the foci are removed and the nutrition of the child improved. As Mariott has said, "two remedial agents are here important, calories and cod liver oil." Vaccines have been given trial in all class of cases, and as in most other conditions, have had the same record of success and failure.

In conclusion, let us remember that pyelitis is always a likely diagnosis in case of obscure fever in infants and children.

Its presence or absence can be proven in most cases by a careful microscopical examination of urine for pus and bacteria.

It can be relieved, and in most cases hastened to a permanent cure by the guarded application of drug treatment.

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DISCUSSION.

Dr. N. C. Womack (Jackson): Pyelitis is a frequent disease. It is found almost as often as you wish to find it. It should be looked for in every case of acute febrile condition that is not classified in your own mind. I would like to speak of one or two points in diagnosis. Up to a few years ago we did not know how to make a diagnosis of pyelitis; we have obtained most of our information in the last few years. In the first place, it takes a microscope, and the specimen of urine should be sterile, and should be cultured and grown on proper culture media.

Pyelitis is classified as acute and chronic. The acute condition should always be suspected if the diagnosis is apparent; chronic pyelitis is never suspected, if the diagnosis is apparent; chronic pyelitis is never suspected, but is usually found during routine examination. It is usually secondary to pus tonsils, infected sinuses, etc. Ten years ago we had a great deal of ileo-colitis. We

do not see it as much as we used to, but we hardly ever see a case of typical ileo-colitis that does not have pyelitis as a complication.

The routes of infection are three—hemaogenous, lymphatic, and by continuity of tissue. In cylic vomiting one can often demonstrate the colon bacillus in a sterile specimen of urine. These cases I think come from chronic appendicitis in children, and I have had cases improve by removing the appendix that had later become acutely involved.

The principal thing is the diagnosis. On the treatment we differ, but whatever the treatment, whether alkalinization, urotropin or what not, remove the foci of infection in tonsils or sinuses or where ever present. Then put the child on constitutional treatment, a building-up treatment. You take a child with a hemoglobin of 60, flabby tissues, nodules on its ribs, rickety—you will not cure it. You may demonstrate the absence of infection in the urine, but in a few weeks it will come back. It may be renewed infection, or it may have lingered there. You must get three negatives before you can rule it out. Sometimes the second and third will be positive. Clean up the child, get rid of the foci of infection, put it on water and urotropin. I have been seeing these cases for ten years, and I never saw a case where you got rid of the foci of infection, built up the child, put it on codliver oil and orange juice and feed it well, that did not get well.

Dr. R. A. Strong (Pass Christian): I think this is the most complete paper on pyelitis that I have ever heard and wish to compliment Dr. Gillespie on it.

One or two points I would like to emphasize, and the first is this—that you have to differentiate between pyelitis the disease, and pyelitis the symptom. There is such a disease as pyelitis, a definite clinical entity which the doctor has described; and there are also a great many instances where pyelitis is merely a symptom of other conditions. For that reason, as the doctor brought out in his paper, if under the ordinary alkalinization treatment you do not get results, then the case belongs to a competent urologist. In other words, if with copious draughts of water to imitate a siphoning effect, if with potassium and sodium citrate over a certain time you do not get results, you can rest assured there is some intercurrent condition. In other days it was impossible to catheterize a child, but the urologist can do this now—catheterize the ureters. Bear this in mind, that it is entirely possible to have congenital torsion of the ureters causing a hydronephrosis. You can have congenital deformities from the kidney down to the bladder. It is reasonable to suppose that in this condition you will find a certain amount of pus in the urine, but it is wrong to say that because you have pus it is a case of pyelitis. So if you do not get results with the treatment as outlined, have the child cystoscoped, have a cystogram made, and also the phthalein test, and see whether or not you have also an intercurrent hydronephrosis, deepseated pyonephrosis, even an abscessed condition of the kidney. In other words, test the function. Have the urologist do a blood nitrogen test.

The doctor could not emphasize all these points, but that is what he meant when he said to go behind the condition and determine whether or not it might be a symptom of some intercurrent disease.

Dr. J. E. Green (Richton): As far as the treatment of pyelitis is concerned, I agree with everything that has been said. The only thing I want to say is this—know what you have. I know, and we all know, that quinine has been given to children and grown people in Mississippi who did not have malaria within a hundred miles of them.

In regard to the cystoscopic examination, you probably will not make that, but you can have it done. Remember 60 per cent. of doctors in Mississippi do not have a microscope and could not use it if they did. But it is possible now in Mississippi to have a microscope available in every county. If the doctor will carry in his case a urethral catheter (not the rubber catheter that one uses to empty the bladder) he can get a catheterized specimen, then go home and find if you have urine loaded with pus, and keep the quinine in the drugstore where it belongs. And remember water, water and more water. I believe more deaths in this State from infectious disease are due to lack of fluids in the body than to any other one thing. Be sure you know what you have, and do not give the patient calomel or quinine until you are sure of your diagnosis.

Dr. W. A. Dearman (Long Beach): I am not a pediatrician nor a urologist. We are indebted to Dr. Gillespie for this paper. It is well rounded out, it is clear and concise and it puts the matter before the general practitioner so he can have a full appreciation of what pyelitis means. It has been conceded that possibly 40 per cent. of all acute febrile conditions in babies are due to middle ear trouble, and I know and you know that pyelitis will simulate malaria. We have treated it for malaria years ago because it had the same clinical symptoms as malaria. But children do not have chills in pyelitis that adults

do. I have never seen a case of pyelitis in adults, especially women, but what they had two or three chills a day, or perhaps one in the day and one at night. You do not have a malaria chill around midnight. You can have it around eight or nine, but not midnight.

The diagnosis rests largely on your urinary findings. Females of course are more prone to pyelitis than males, and the three principal routes through which the disease travels are the lymphatics, the haematogenous route, and by continuity of tissue.

There are two outstanding classifications of pyelitis in children—acute and chronic. We all know you can have a secondary pyelitis, but when you are dealing with an acute, primary pyelitis in children it is infectious, and in 95 per cent. of cases due to the colon bacillus.

I do not understand why it is that sometimes we are at such variance with reference to finding pus in the urine. I have a good standard rule, and I perhaps have done 20,000 urinalyses. With the male child, a centrifugalized specimen of urine will have one or two pus cells in the field under high power; with the female, in a catheterized specimen of urine, four or five pus cells in the field is about right for normal urine. I think most females that you catheterize will show that. A purulent urine to my mind is one that in a centrifugalized specimen you will find five to twenty pus cells that may be in clumps or may not. Nine times out of ten you will find a positive urine culture.

I do not alkalinize my patients, but I depend on urotropin. I am a little afraid of 15 grains of urotropin in anything but a grown person because you can soon set up a cystitis. If you irritate the bladder with urotropin you irritate the kidney higher up. Acute pyelitis in a perfectly healthy child is usually clear-cut as to treatment.

I think our findings in the urinary tract can be narrowed down, and if we do not find more than two or three pus cells in the male and four or five in the female we may call it clear. But understand that you can have a genito-urinary infection without any pus in the urine.

Dr. E. H. Linfield (Gulfport): Just to elaborate a little on the urological side of it as Dr. Strong and others have done, we now have an infant cystoscope, very small, devised especially for cystoscoping infants and young children. It does not require an unusual amount of technique to use this instrument, although you should know how before you attempt to do so. You must understand that with an infection in the kidney of a child it is possible, as in the adult, to get one or more abscesses forming along the tract of the ureter itself, and as these abscesses heal with scar formation, as in acute infections of the male urethra, there is a contraction and subsequently the formation of stricture, either partial or total. Along with this you naturally have a damming back in the pelvis of the kidney of the urine, and in this stagnant urine organisms flourish.

I do not believe in medication; copious draughts of water will do but little good. I believe the only thing you can do for them is to dilate the ureter with a catheter and use the cystoscope. While you are in there it is always well to lavage the kidney pelvis with some antiseptic solution. But I want to point out that a great many of these cases of long and continuous pyelitis, or whether it be pyelitis or just pus in the urine, with no symptoms at all may be due to stricture. The symptoms may be treated, or the bladder alone—if you have a chronic cystitis and treat the bladder alone you will not get results because you have overlooked the fact that the infection is in the renal pelvis. If in these cases you get no results from treatment of the bladder, you should have a pyeloureterogram made, following of course the correct technique as to the posture of the patient, to determine whether you have a hydronephrosis, a torsion of the ureter, a partial stricture of the ureter, or what not. New growths will sometimes cause contraction of the ureters that will give the same symptoms as stricture.

Dr. George A. Hendon (Louisville, Kentucky): From one standpoint this interests me as surgeon, on account of the fact that you can have pathology in the right lower quadrant of the abdomen other than appendicitis. I think this paper will stimulate more careful differentiation between chronic appendicitis and infections of the pelvis of the kidneys and ureter on that side.

I have always been extremely sensitive regarding chronic appendicitis. Most cases that I have operated have made splendid recovery, and then have embarassed me by coming into the office a month or so after the operation when there were other people present and saying in a loud tone, "Doctor, I have that pain right there just where I had it before you operated." I think every man who has ever operated for chronic appendicitis has had that experience, and if he has not he surely will have. Therefore I say that the majority of cases of chronic appendicitis are either pyelitis, or some disturbance of the ureter on the right side, and before we go so far as to operate on a chronic appendix it should be the absolute duty of every man to eliminate infections of the kidney and ureter. There are few

cases of chronic appendicitis that cannot at some period of their history give a clear, definite account of an acute attack. Therefore I think a so-called chronic appendicitis without a definite history of an acute attack must be ascribed to infection of the kidney on the right side and this particular pathological entity ought to be thoroughly eliminated before we assume the responsibility of opening the abdomen for chronic appendicitis.

Of course you are all familiar with the work of Hunner, who has probably done more and better work than any man in the United States demonstrating that the very slightest interference with the structural conditions of the ureters may set up a chronic inflammation. There is a peculiar propensity of the organisms that inhabit the tubular organs of the body to become pathogenic, and if in one of the tubular organs of the body there is something that induces interference, the organisms that naturally occupy that particular organ will assume pathogenic properties. We all know that we have organisms that are not only not pathologic, but are healthful; but the moment interference occurs, then these organisms become intensely pathogenic. The same thing applies to the ureters. I do not suppose there is any such thing as absolute sterility of the contents of the pelvis of the kidney, but the organisms are innocuous. But the moment interruption occurs with the current, then these organisms assume pathogenic properties.

I think this lesson should be drawn from the paper, and it is the point I would emphasize, that before we open the abdomen in the right lower quadrant we should eliminate infection of the kidney and ureters.

Dr. G. Y. Gillespie (closing): I appreciate the men who have spoken along the line of urology. There is no doubt a distinction between pyuria and pyelitis. Pyuria does not mean pyelitis. We all know that the urogenital tract of the child is subject to malformations and deformity—you are likely to have any type of deformity in the urogenital tract. I tried to confine my paper to the clinical entity pyelitis, meaning infection of the pelvis of the kidney, and the symptoms due to pyelitis.

There was some question brought up about the treatment with urotropin. You men who heard Dr. Helmholtz talk about this question at Dallas will remember that he said he gave as many as 20 to 30 grains of urotropin every three or four hours, and that you could give that quantity provided you gave sufficient fluid intake. There is no doubt that urotropin does produce an irritation of the kidney substance. You give it for any period of time and you will produce an irritation, but urotropin for a few days certainly will not produce blood in the urine in many cases if sufficient water is given. You will not get the frequent and painful micturition when you give it in this maner. When I came back from Dallas I began giving babies and children big doses of urotropin. I gave a seven-year-old child 20 grains every three hours for several days. I had been trying for three months to sterilize the urine, and at the end of three days with urotropin given this way I secured a sterile specimen and it is still sterile. The child had been suffering for five years and had been under my treatment for three months. I did not produce any haematuria in that case; there was a little painful micturition for a day or two and after that there was no difficulty. I do feel you can give babies big doses of urotropin and thereby sterilize the urine without producing any serious damage to the kidneys provided you do not give it over too long a period of time.

I am very thankful for this discussion. The principal point I want to emphasize is to be sure that you make a urine examination in babies and children with obscure conditions before you rule out the question of infection along the urogenital tract.

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F. T. Gouaux, M. D.	M. W. Robertson, M. D.
S. C. Barrow, M. D.	T. W. Holmes, M. D.
F. C. Bennett, M. D.	D. W. Jones, M. D.
C. A. Weiss, M. D.	W. G. Gill, M. D.
V. A. Miller, M. D.	E. M. Gavin, M. D.
S. J. Couvillon, M. D.	J. S. Ullman, M. D.
	S. B. McIlwain, M. D.

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Manuscripts and communications should be addressed to the Editor, 1326 Whitney-Central Bldg., New Orleans, La.

THE MURPHY MEMORIAL.

Another page in the history of American medicine was written recently when the beautiful John B. Murphy Memorial Hall was dedicated and presented to the American College of Surgeons in Chicago. The exercises on this occasion were specially in memory of Dr. Murphy, whose white marble bust was placed in the center of the platform, draped with American and British flags.

Mr. Leroy A. Goddard, president of the Murphy Memorial Association, which raised the $600,000 to complete the building, presided. The invocation was delivered by the Rev. William H. Agnew, president of Loyola University. Mr. Goddard formally presented the Hall to the American College of Surgeons. It was accepted by Dr. Rudolph Matas, president of the College. Dr. William J. Mayo also spoke. We qucte below from the Chicago *Daily Tribune.*

In accepting the gift for the College, Dr. Matas said, in part: "As we contemplate the architectural beauty of this memorial and consider its destiny we may see that it is plainly written that it will become the center of the organized activities of the surgical profession resident in the western hemisphere. We now recognize, with glad acclaim, that this living monument, built in recognition of the scientific service rendered to humanity by one of the greatest expcnents of our science and our art, marks an epoch in the relations of the medical profession and the public. It testifies in mute but unmistakable terms that the soul of surgery has found its place in the heart of humanity."

"Is it not fit that here, on the shore of one of the great lakes; in a city that vibrates with the dynamic energy of its millions of people; in a city still so young that the enterprising spirit of the pioneers who founded it has not been crushed by centuries of antiquity—should hold a memorial institution such as this that is looking to the future for the crowning glory of its service? May there come an inspiration and stimulation to this memorial and to the workers who give it life—who, as the years go by will lead it into the highways of progress, to the ultimate attainment of its ideals in every field of surgical usefulness and endeavor. To this end may this memorial endure as a lasting tribute to the starlit name it bears—John B. Murphy."

YOUNG'S PRACTICE OF UROLOGY.

The recent appearance of the two volume encyclopedic work on urology by Hugh Hampton Young marks an epoch in Ameri-

can surgery of which all Southerners might justly feel proud. It is with a feeling of glad satisfaction that we recall that this distinguished author is a native of our Sister State, Texas, that he has been the head of the department of urology, Johns Hopkins hospital and Johns Hopkins university, for the past thirty-one years, and that he served his country as director of urology of the A. E. F. in France during the World War. He has served as president of the American Association of Genito-Urinary surgeons; president of the American Urological Association; and is now president of the International Association of Urologists. He has, for years, been a corresponding member of the Association Francaise d'Urologie and the Deutsche Gesellschaft fur Urologie. In 1906 appeared his *Studies in Urological Surgery* (Vol. viii, Johns Hopkins Hospital Reports) and also *Hypertrophy and Cancer of the Prostate* (Vol. xiv., Johns Hopkins Hospital Reports). He has contributed one hundred and twenty-five papers on urological subjects to American and foreign medical journals. He is the founder and editor of the *Journal of Urology*.

From the University of Virginia Dr. Young received his A. M. degree in 1893 and his medical degree in 1894. In 1895 he pursued post-graduate work in urology at the Johns Hopkins university and shortly after this received his teaching as well as staff appointment at Hopkins—a position which has added radiance to his *alma mater* and has made his name an indispensable talisman among the urologists of the world. He was married to Miss Bessy Mason Colston, of Baltimore.

That he should have accompanied General Pershing on the *Baltic* to England and that he should have served in France until after the armistice is better understood when we realize that Dr. Young comes from military stock; he is the son of Gen. William Young and grandson of Gen. Hugh Young, who fought in the Civil War. It is however not so widely known that Dr. Young, at the age of sixteen, had chosen the army as a career and rose to a first lieutenant. He soon gave up arms for medicine.

His *Practice of Urology*, just from the Saunders press, is in two octavo volumes totaling 1433 pages, with 1010 illustrations—20 beautifully done in colors—by the artist Wm. P. Didusch. The work itself was compiled with the able assistance of Dr. David M. Davis and Dr. Franklin P. Johnson. The fact that the treatise is based upon a study of 12,500 cases observed in the Brady Urological Institute in itself makes the work unique. The volumes are tangible evidence of the many years of painstaking study and clinical investigation. Thoroughness pervades. To read from its pages makes one feel that he is listening to the master speaking in that suave, convincing style that, for so many years, has kept his listeners rigidly attentive so as to miss none of the sound philosophy he so graciously imparts to the young medical student as well as to the older post-graduate. His *savoir faire* is inimitable.

Volume I deals with the physiology and pathology of micturition; obstructive uropathy; urogenital infection and infestations; urolithiasis; benign hypertrophy of the prostate; and, neoplasms of the urogenital tract. Volume II takes in malformations and abnormalities of the urogenital tract; ulcerative lesions; traumatisms and foreign bodies; ulcerative lesions of the external genitalia; diagnostic significance of special symptoms; the examination of the urologic patient; all operations on urogenital organs; urology in infancy and childhood; urologists in war; testicular and prostatic organotherapy; and, the study and teaching of urology.

The Author presents, in a most lucid and detailed fashion, the operations which have justly made him world-famous. His operation for the removal of the prostate via the perineal route is graphically presented,

step by step, both in illustrations and text. Not the least valuable, the reader will find the analyses tabulated at the end of each chapter on operative cases observed at the Brady. For over fifteen years the medical profession have awaited the publication of just such a work. Young's *Practice of Urology* is here! Need we say more?

CHIROPRACTORS AGAIN.

The efforts made to put through the last legislature, laws authorizing the chiropractors to practice medicine in this state, failed as they always have in the past, much to the credit of the law makers and their advisors. It can be said without fear of successful contradiction that the practice of medicine in Louisiana is on as high a plane of dignity and honor, as well as efficiency, as it is in any other state in this country. We are particularly free from bickerings and controversies within the profession, and we are also particularly free from the various cults and quacks that prey upon the ignorant and distressed in most other states.

At first thought, one who is at all informed about the nature of disease and remedies therefor, could hardly believe that any support whatever would be given to these people who seek to be permitted to treat the sick without possessing any considerable knowledge of the anatomy and functions of the human body or the causes and nature of the diseases they pretend to cure. Their own claims as to the causes of disease and the remedies they employ are too ridiculous to command the serious consideration of sensible people. Still they have a following. There were legislators who championed their cause at the last legislature and also some two or three hundred people from about over the state who went to Baton Rouge on a special train to substantiate the claims of wonderful cures that have been wrought by "chiropractic." Those of the medical profession who were present and witnessed this spectacle must have recognized that a large part of those people are afflicted with mental states for which there is no remedy. They deserve our deepest sympathy, and our forbearance so long as they do not jeopardize too greatly the health and lives of other innocent people, many of whom are helpless. These would be jeopardized by legalizing practice of medicine by incompetents as the proposed law would have done.

One thing that often prevents the layman from forming a correct opinion on this matter is his failure to recognize the dependence of intelligent treatment upon anatomy, physiology, pathology and diagnosis. He does not realize how much knowledge and scientific training is necessary before one is able to make even reasonably correct diagnoses on which all intelligent treatment is based.

Those of the medical profession or others who have occasion to discuss the subject with laymen, should point out the necessity of correct diagnosis, which is assured only by adequate fundamental knowledge, before intelligent treatment can be applied. Otherwise treatment would be guess work and would often be harmful instead of beneficial. It often occurs that the diagnosis is far more important for the individual as well as for others, than the treatment. To license these people to treat disease would also license them to make diagnoses which they are utterly unable to do, for lack of knowledge if not for lack of other needful qualifications for managing sickness and distress in our fellowman.

TRANSACTIONS OF ORLEANS PARISH MEDICAL SOCIETY

TRANSACTIONS OF THE ORLEANS PARISH MEDICAL SOCIETY.

During the month of July there was held one meeting of the Board of Directors and the Second Quarterly Executive Meeting.

The Board of Directors has completed the proposed revision of the By-Laws and same will be submitted to the Society for their consideration during the fall.

Dr. H. S. Cocram, who retiring from practice has resigned from Active Membership in this Society, was elected to Honorary Membership.

The resolution relative to the purchase of a Domicile Site was voted down, thus closing the matter for the present time.

The Hospital Abuse Bill No. 99, as introduced by Mr. John Dart, Jr., has finally become a law and is now known as Act 62 of the General Assembly, 1926. The complete report of the Hospital Abuse Committee including the wording of this law is included in this bulletin.

The Board of Administrators of the Tulane Educational Fund have offered the following resolution which was presented to the Society by Dr. M. J. Magruder, a member of the Tulane Board. The kind offer of the Tulane Board of Administrators was gladly accepted at the Executive Meeting of the Society and a letter of thanks and appreciation was sent to this Board for their kind offer.

Whereas: There exists at present an arrangement between Tulane University and Orleans Parish Medical Society whereby the Society is extended the privilege of conducting its meeting and housing its library in the Hutchinson Memorial Building, and

Whereas: It is the purpose of Tulane University to foster and promote higher education and through its Department of Medicine co-operate with the organized medical profession in the advancement of medical science;

Be it resolved: By the Board of Administrators of the Tulane Educational Fund that we wish to extend to the Orleans Parish Medical Society the assurance of our good will and desire to continue the existing cordial relations, which will in no way be effected by the contemplated erection of a new building for the School of Medicine; other than a provision for more modern and better facilities for conducting the work of the Society.

The Board of Directors through a sub-committee has selected the orator for the Stanford E. Chaille Oration, this oration will be delivered on the second Monday of November, the orator being Dr. Allan O. Whipple, of New York, Professor of Surgery at Columbia. The title of his paper will be "The Spleen and Its Relation to Blood Dycrasias."

The following resolutions were adopted at the Executive Meeting of the Society:

Whereas, By the Will of God, Dr. Marion H. McGuire, our confrere, was taken from among us.

Therefore be it resolved, That this Society desires to express to the family of Dr. McGuire its regret and sincere sympathy in its bereavement.

Be it further resolved, That a copy of these resolutions be spread upon our minutes and a copy be sent to the bereaved family.

REPORT OF TREASURER FOR JUNE.

Actual Book Balance 5/31/26	$3,159.74
Receipts during June	310.00
Total Receipts	$3,469.74
Expenditures	552.55
Bank Balance: 6/30/26	$2,917.19

REPORT OF LIBRARIAN FOR JUNE.

Bibliographies have been prepared during June on subjects as follows:

Multiple Dislocations of the Metatarsal Bones.

Food Value of the Banana.

Gonorrhea in the Female.

Pyelitis in Pregnancy.

These lists have been placed on file in the Library for use of the membership.

The Library has been the recipient of a gift of 52 volumes from Dr. H. W. E. Walther, during June, of which 42 are new in our collection. These books will form a valuable addition to the Genito-Urinary section of our Library. Note of the more recent volumes is made in the accompanying list.

Sixty books have been added during June. Of these 44 were received by gift, 1 by purchase and 15 from the New Orleans Medical and Surgical Journal. A list of notable accessions is as follows:

Osler: Modern medicine. vol. 2. 1926.

Stone: Blood chemistry colorimetric methods. 1926.

Greene: Medical diagnosis. 1926.

Potter: Compend of materia medica. 1926.
Mayo foundation: Heredity. 1925.
Barrett: Man, his making and his unmaking. 1926.
Taylor: Psychotherapy. 1926.
Gould: Pocket cyclopedia of medicine and surgery. 1926.
Moore: Medical ophthalmology. 1925.
Swanzy: Diseases of the eye. 1925.
Allen: Kidney diseases and high blood pressure. n.d.
Odeneal: Mouth, throat, nose and ear. 1926.
Foote: Diseases of the newborn. 1926.
Miller: Submucous endocapsular tonsil enucleations. 1926.
Cabot: Facts on the heart. 1926.
Crotti: Thyroid and thymus. 1922.
Mann: Physiological histology. 1926.
Casper: Handbuch der Cystoskopie. 1919.
Hirsch: Compend of genito-urinary diseases and syphilis. 1925.
Billroth: Medical science in the German universities. 1924.
Gurd: Infection, immunity and inflammation. 1924.
Pilcher: Surgical pilgrim's progress. 1925.
Craig: Wassermann test. 1918.
Grover: High frequency practice. 1925.
Bayliss: Principles of general physiology. 1920.
Voelcker: Urologische Operationslehre. 1921.
Pennington: Diseases and injuries of the rectum, anus and pelvic colon. 1923
Mills: Within the atom. 1921.

Two hundred additional filing boxes have been purchased and are being used for the incomplete journal files, thereby preserving these unbound magazines for available use, until such times as the volumes may be completed and bound.

Respectfully submitted by
DANIEL N. SILVERMAN, Librarian.

HOSPITAL ABUSE COMMITTEE REPORT. SECOND QUARTER.

July 12th, 1926.

To the Officers and Members, Orleans Parish Medical Society.

Gentlemen:

The following Bill No. 99 by Mr. Dart, now known as Act 62, General Assembly, 1926, has been promulgated.

"Concerning the admission of applicants to state supported charity hospitals, and providing a penalty for violation of same.

Section 1. Be it enacted by the Legislature of Louisiana that it shall be the duty of the Board of Administrators of the State Charity Hospital, or hospitals supported by the State, to refuse admission for treatment to persons not poor and destitute; provided, that in no case shall persons of any description be refused emergency treatment; that the Board of Administrators of such hospitals shall make rules and regulations for the admission of persons to said hospitals, for the purpose of confining admissions to said hospitals to the poor and destitute.

Section 2. That the Board of Administrators shall provide a questionnaire to be answered by all applicants for admission to said hospitals before any person shall be admitted to said hospitals; that any person who is admitted to said hospitals through fraud or misrepresentation on the part of an applicant for admission, or any one acting for said person, shall be guilty of a misdemeanor and upon conviction shall be fined not less than five dollars nor more than twenty-five dollars, or confined in the parish prison for not more than ten days, or both, at the discretion of the court.

Section 3. All laws or parts of laws contrary to or inconsistent with the provisions of this act, be and the same are hereby repealed."

Your Committee has labored diligently and has spared no effort or personal discomfort in fostering the cause. We visited Baton Rouge nine times in the interest of the Bill. Approximately 300 letters and telegrams were sent to the Legislature, and to other individuals, principally Doctors in the State at large, soliciting their help and influence in behalf of our measure. Every possible legitimate means were employed to accomplish our purpose.

The Bill was opposed by the Board of Administrators of the Charity Hospital. These gentlemen contended that the law was too drastic and also that the Hospital, in Cases able to pay, should assess a charge within the means of the person treated; in other words, the Charity Hospital be converted into a part pay institution.

The viewpoint of these gentlemen is expressed in the following quotations taken from the daily press:

The Times-Picayune, May 18th, has the following:

"As drawn roughly last night, the bill would give Charity Hospital the right to question people who come to the Hospital for treatment and would authorize the institution to sue those able to pay. It provides, however, that no person shall be refused emergency treatment. The bill proposed by

the doctors provided more stringent regulation of the alleged abuse of the free hospital privileges.

William Pfaff, member of the Hospital Board, advocated investigation of suspicious cases by the Social Service Department, suggesting that where full payment could not be obtained the patient be asked to pay what he could.

George J. Glover and others objected to any law touching on the ability of patients to pay, but finally agreed to the proposed bill."

Also in the issue of Times-Picayune of May 21st, we read:

"Expressing belief that some of the provisions of the Charity Hospital Bill introduced by Representative John Dart of New Orleans are too drastic, a substitute Bill was brought to Baton Rouge today by Dr. W. W. Leake, superintendent; Fred W. Matthews, secretary-treasurer, and J. A. Dumaine, members of the Board of Directors of the hospital.

Under the terms of the Dart Bill, said to be approved by the Orleans Parish Medical Society, admission to Charity Hospital except emergency cases, is restricted to those of proven inability to pay. It also provides for prosecution in the recorder's court of persons who gain admission fraudulently. The new bill brought up by Dr. Leake and Secretary Matthews eliminates the prosecution feature, and provides that the hospital authorities shall have the right to sue persons able to pay for services rendered them."

And in the Times-Picayune of May 23rd, under the following caption, *"Fight Over Hospital Bill,"* is the following:

"A stiff fight in committee over the Charity Hospital abuse bills is in sight. The doctors' bill introduced by John Dart would prohibit the entrance of any patient able to pay for treament except in emergency cases. William Pfaff, President of the Board of the Hospital, Superintendent Leake and others oppose the measure and want in its place a law that will enable the social service of the hospital built up so that where cases of able-to-pay people are handled that the social service authorities of the hospital may investigate and assess a certain charge within the means of the person treated, and collect it by court proceedings, if necessary.

President Praff refuses to approve any measure that would deny anyone the right to enter the institution. He thinks the hospital should be able to handle the cases of the moderately poor as well as the very poor, and fix such a charge, after investigation, as will not reduce the persons treated from a producing unit in the community to a state of indebtedness and dependency.

The medical staff of the hospital strongly favors Mr. Dart's bill. It is the contention of Dr. Paul Gelpi, head of the Staff, and A. E. Fossier, chairman of the Committee on Hospital Abuse, that the admission of able-to-pay patients prevents the admission of very poor and destitute persons."

And editorially, the New Orleans Item, of May 19th, voiced the following:

"Disapproval by the Directors of the Charity Hospital of a proposed bill forbidding hospitals to accept for charity treatment persons not destitute and making it a misdemeanor punishable by fine and imprisonment for anyone not destitute to obtain charity treatment, was sensible and proper. The bill is sponsored by the Parish Medical Society."

From these quotations the strong opposition encountered by your Committee in the passage of the law may be appreciated.

The Bill passed unanimously the Public Health and Quarantine Committee of the House of Representatives, and a few days later also overwhelmingly passed the House of Representatives, notwithstanding the fact that Mr. Frymire, the leader of the New Orleans delegation, opposed the bill on the floor of the House. It passed the Health, Quarantine, Drainage and Charitable Institution Committee of the Senate by a vote of 5 to 3, and the Senate by 32 to 2. Senator Thoele Thomas dissenting. In both committees the bill was opposed by the legislative committee of the Board of Administrators of the Charity Hospital, Messrs. Dumaine, Pfaff, also Dr. Leake and Mr. Matthews. In the Senate Committee Mr. Sylvan Levy presented arguments against the bill, and we regret to record the fact that the only discordant note in our previously harmonious relationship with the Board of Administrators was sounded by Mr. Levy, who attacked and impugned the motives of the medical profession of the City and of the State for their sponsorship of the bill. The Bill became a law without the signature of the Governor according to Article V, Section 15, of the Constitution of the State of Louisiana.

I wish to take this occasion to express my sincere appreciation and heartfelt thanks to the members of your Committee, Drs. Jules Dupuy, Emmett L. Irwin, Jerome E. Landry, Lucien LeDoux and Maurice Provosty.

The members of the Profession should greatly appreciate their efforts. They gave unstintingly of their time and devoted their whole energy to

the cause. All credit is due to them, for it is only by their sheer determination, unswervering loyalty, and to the absolute disregard of their time and efforts, that this victory was made possible.

Your Committee also acknowledges the great help given by Dr. Paul J. Gelpi, President of the Visiting Staff of the Charity Hospital for his usual Disraelian diplomacy, the wisdom of his counsels and his inexhaustible energy, both here and in Baton Rouge, have been a most valuable factor in the promotion of our cause.

To the President and the Secretary of the Society we wish also to express our appreciation for their valuable help, which has proven to be a great asset.

We wish also to acknowledge the support given by the Louisiana State Medical Society in the Monroe Convention and through its President, Officers and Legislative Committee, who materially helped in Baton Rouge.

The Committee also gratefully acknowledges the valuable assistance and unqualified support given by the Board of Administrators of the Charity Hospital of Shreveport, and by the members of its Visiting Staff, and also the Caddo Parish Medical Society.

This Society is greatly indebted to Representator P. H. Gilbert, who championed the cause in the Senate, for their influence and diplomacy contributed to a very large degree to the passage of the law.

To our confreres, Drs. Brown, Drouin and Jordan, Representatives to the General Assembly of the State, stalwart champions of medical progress in Legislature, is due a vote of thanks and appreciation for their interest, energy and devotion to the cause of the poor, and the elimination of hospital abuse which has so long operated in the Charity Hospital to the detriment of those deserving free hospital care.

Respectfully submitted,

A. E. FOSSIER, M. D., Chairman.

CANCER, VITAMIN IMBALANCE AND ROENTGEN-RAY ACTIVITY

Further report is made by Montrose T. Burrows, Louis H. Jorstad and Edwin C. Ernst, St. Louis (Journal A. M. A., July 10, 1926), on their experiments dealing with the relationship in an etiologic way of certain dietary constituents and cancer. In the light of these studies, cancer is only the result of anything that leads to an excessive production of vitamin B or removes the vitamin A or growth inhibitor from small areas of tissue in the body. Roentgen rays act only to increase the vitamin B content in the tissues. In the proper dosage, therefore, it may produce cancer as it may through the excessive production of vitamin B destroy cancer. Cancer is only the result of a vitamin imbalance. Normal life depends on a proper balance between vitamins A and B. The problem of the cure of cancer is the restoration of this balance. The problem of the prevention of cancer is the prevention of such imbalances taking place. Roentgen rays act on the organism to produce vitamin B. Larger doses of these rays lead to the liberation of larger amounts of vitamin B with a secondary production of vitamin A. These larger doses of roentgen rays lead always to an early exhaustion of the rat, while larger doses repeated over long intervals do not cause this early exhaustion. The roentgen ray becomes important in the cure of cancer in that it liberates an excess of the archusia or vitamin B from the cells when given in the proper doses. As must be noted the cancerous tissues contains already a high content (S^3) of the archusia. Only a slight stimulation is sufficient to increase this amount to a value of S^4, which causes the cells to degenerate. The normal tissue contains much less archusia. The same dose acting on them may not even cause them to grow. The first problem for the advance of roentgen-ray therapy is a proper and well controlled dosage. The second problem is to produce the proper reaction in the surrounding normal tissues. Too great a dose on these tissues must cause a decrease in blood supply and make them favorable for the spread of the cancer. The prevention of this spread of the cancer is the protection of the blood vascular system in these regions. As shown above, the vascular system is only the path of inflow of the vitamins from without. It is maintained through a proper balance of vitamins A and B. The progress in roentgen-ray therapy, as is evident from these studies, will come first through the establishment of a uniform method of measuring (one of us has undertaken and instituted methods for such procedure), and the establishment of proper dietary and nutritional conditions in the patient before such therapy is instituted.

LOUISIANA STATE MEDICAL SOCIETY

H. Theodore Simon, M. D., Associate Editor.

MONTHLY BULLETIN OF THE SHREVEPORT MEDICAL SOCIETY.

At the Scientific meeting in July, Dr. John N. Thomas, of the Central Louisiana State Hospital at Pineville, will present "Increasing Insanity in this Country and What Should Be Done to Prevent It." Dr. A. A. Garrison, D. D. S., member of the Shreveport Dental Society, will read a paper on "Focal Infections." We hope that every member will try to be present to give these well known men a welcome to our Society.

At the Scientific Program on June 1, 1926, Dr. Webb read a paper on Banti's disease instead of Spleno-myelogenous Leukemia, which was an error on the part of the program committee. Dr. Webb's paper was very interesting and well presented with report of three recent cases at the Highland Clinic. This paper was discussed by Drs. Lloyd, Butler, Rutledge, Barrow and Webb.

Dr. Bodenheimer gave a very interesting discussion of the life and works of Dr. Ambrose Pare.

Dr. Picard reported a case of congenital hydronephrosis of the left kidney in a colored baby, kidney was removed and baby lived 23 days, but with no urine elimination during this time.

A special meeting of the Shreveport Medical Society was called to order on June 12 at 8 P. M. at the North Louisiana Sanitarium for the purpose of taking action on Legislation now pending relative to Hospital abuse. The following 21 members were present: Drs. Mosely, Herold, Barrow, Willis, Sr., Boyce, Bodenheimer, Sanderson, Lambeth, Lucas, Blume, Paul, Crain, Harwell, Hargrove, Rigby, J. M. Gorton, Alverson, Douglas, Dickson, Hamner and Phillips. The following is the request and signatures of those calling for the meeting:

"We, the undersigned doctors, respectfully request President Crain to call a special meeting of the Medical Society to meet at the North Louisiana Sanitarium at 8 P. M. for the purpose of taking action on legislation now pending relative to Hospital abuse. Signed: Drs. S. C. Barrow, D. H. Alverson, C. E. Hamner, F. G. Ellis, J. M. Gorton and W. S. Harmon."

Dr. Barrow in a general way gave the details leading to the request for special meeting. Dr. Herold read resolutions adopted by the Orleans Parish and State Medical Societies. Dr. Moseley read the bill which was passed by the House of Representatives.

Dr. Sanderson made a motion that we wire our Senators and Representatives that the Shreveport Medical Society desires to express approval of a bill before the Legislature excluding patients from the Charity Hospitals who are able to pay and preserve the hospitals for the indigent sick and wounded and let the penalty be criminal and not civil.

Dr. Gorton then made a motion that a committee be appointed to retire from the meeting and frame resolutions to be presented to the Society. The President appointed on this committee, Drs. Douglas, Rigby and Alverson. The following resolutions were presented:

"The Shreveport Medical Society unanimously wishes to endorse a Hospital Abuse Bill which will exclude all patients from the Charity Institutions of the state who are able to pay reasonable fees to private hospitals.

"Further, it is in favor of criminal prosecution of those who abuse and take advantage of this ruling.

"Further, it is not in favor of having pay wards in these Charitable Institutions or charging fees for work done therein, so that the Charity Hospitals will be able to properly care for the indigent sick and wounded alone."

Dr. Willis made a motion that the resolutions be adopted, which was duly seconded and passed.

Dr. Bodenheimer then made a motion that the Secretary send a night letter to each of our Senators and Representatives conveying the sentiment of these resolutions and to be signed by the President and Secretary.

No further business the meeting adjourned at 9:10 P. M.

W. R. HARWELL, Secretary.

The Webster Parish Medical Society met Friday, July 2nd, at the Imperial Hotel for lunch. After lunch the meeting was called to order by the President, Dr. J. B. Benton.

Dr. Paul Crutsinger made a talk on Diathermy and reported some cases. Dr. C. M. Baker gave some case histories on abdominal pain. A good many informal talks were made by the other members.

Dr. J. E. Rooks and Dr. E. B. Godfry were elected members of the Society.

A suggestion was made by the President that the Society meet more often. After discussion it was decided to hold meetings every two months and lunch together and have short scientific programs afterward. In this way the doctors from over the parish will not loose so much time in attending the meetings.

NEW ORLEANS GYNECOLOGICAL AND OBSTETRICAL SOCIETY.

At the annual meeting of the Society, the following officers were elected for 1926-27: Dr. W. D. Phillips, President; Dr. M. J. Gelpi, 1st Vice-President; Dr. T. B. Sellers, 2nd Vice-President; Dr. H. E. Miller, Secretary; Dr. H. V. Sims, Treasurer.

The Council is composed as follows: Drs. J. W. Newman, P. Graffagnino and C. J. Miller. The retiring President, Dr. W. E. Levy, reviewed the activities of the Society during the past year. Scientific papers were presented by Drs. J. F. Dicks, W. E. Levy and C. J. Miller, at the meeting. The annual dinner of the Society was well attended and proved a very enjoyable affair. Dr. W. D. Phillips, President, named the personnel of the committees and outlined some of the plans for the coming year.

RE-OPENING OF THE FRENCH HOSPITAL.

The formal re-opening of the French Hospital took place Tuesday, June 29th, 1926, following the inspection of this modern hospital by the physicians of the city. The Directors of the French Society of which Mr. Octave Garsaud is President, are Administrators of the Hospital, with Mr. O. Bildstein as Superintendent.

Dr. Octave C. Cassegrain, Tulane, 1915, has been appointed Surgeon-in-Chief, and will direct and develop the professional side of the institution.

This Hospital is ideally situated and is the only Hospital below Canal Street. The appearance of the buildings and grounds have been improved and the interior completely renovated. It has three floors and is of 110 bed capacity, equipped with two operating rooms, a delivery room and Clinical and Radiological laboratories, and a Pharmacy department.

Dr. W. H. Harris and Dr. A. Friedrichs are the Pathologists and Dr. L. Menville and T. H. Oliphant are in charge of the X-ray department. Dr. E. E. Allgeyer is the Anesthetist.

The resident Staff consists of three internes and the necessary complement of graduate nurses.

At the opening exercises addresses were made by the following: M. de Simonin, Consul-General of France; Mr. O. Garsaud, President of the French Society; Dr. O. C. Cassegrain, Surgeon-in-Chief; Dr. W. H. Harris, T. H. Oliphant and Lucien Ledoux. This hospital will prove a welcome addition to the hospital facilities of this city.

LOUISIANA DERMATOLOGICAL SOCIETY.

The Louisiana Dermatological Society was organized May 24th, 1926, at a meeting held at the Touro Infirmary.

Applications for membership will be received from any dermatologist in the State of Louisiana affiliated with his local medical society and the American Medical Association.

President, Dr. H. E. Menage, Medical Building, New Orleans, La.

Secretary, Dr. T. A. Maxwell, 1119 Union Indemnity Building, New Orleans, La.

On May 24, 1926, the honorary degree of LL.D. was conferred upon Dr. Rudolph Matas, Professor of Surgery, Tulane University, by the University of Alabama.

On June 8th, 1926, the graduating class of the Medical School of Tulane University presented a full-size portrait of Dr. Rudolph Matas, Professor of Surgery. Dr. Geo. H. Beevers, of the Class, made the presentation, and Dean Bass accepted the portrait for the Faculty. Dr. Matas delivered the farewell address to the class in which he revived many interesting and striking episodes of his career as a teacher in the Medical School from 1885 to 1926, ten years as Demonstrator and thirty-one years as Professor of Surgery. The portrait, painted by Mr. Harry A. Dolan, has been placed in the library of the Medical School.

The John B. Murphy Memorial Building, probably the most beautiful building ever erected to the exclusive cult of Surgery, was dedicated in Chicago (48 East Erie Street) on Thursday, June 10, 1926. The building, which has cost approximately $800,000, was presented to the American College of Surgeons by Mr. Leroy A. Goddard, President of the J. B. Murphy Memorial Association. Dr. Rudolph Matas, President, accepted the building for the College.

On the following day, June 11, the American College of Surgeons held its first session in the

Memorial Hall. The hall was crowded with a very brilliant and select audience, who listened to the addresses delivered by Drs. Franklin H. Martin, George W. Crile, W. W. Chipman, of Montreal; George David Stuart, of New York, and by Dr. Rudolph Matas, who presided over the meeting.

On Tuesday, June 29, 1926, the retiring internes of the Touro Infirmary were given a farewell banquet by the Administrators of the Hospital. Addresses were delivered by Mr. Rosen, President of the Board; Dr. I. I. Lemann, Dr. Rudolph Matas, Dr. Spellman, Superintendent, and Drs. Lockhard, Cohen and Dr. Warren, who spoke for the Interne Staff. The meeting was presided over by Dr. J. Numa Roussel, Chairman of the Executive Staff.

BULLETIN NO. 3

TUBERCULOSIS AND PUBLIC HEALTH ASSOCIATION OF LOUISIANA.

535 St.. Charles St., New Orleans.

It is of interest to all tuberculous workers to know that the decline in the Tuberculous death rate is continuing. For the Registration Area the records show a saving of three lives more in 1924 than in 1923 per 100,000 population. When the final figures are available for 1925, the decline will probably prove to be even greater. The total number of deaths reported in Louisiana for the past four years is as follows: 1922, 2,052; 1923, 1,945; 1924, 1,926; 1925, 1,918.

The National Tuberculosis Association has recommended that local organizations conduct Anti-Spitting Campaigns sometimes during the year, preferably now, and has prepared posters and a manual which contains valuable suggestions as to how a local organization can go about putting on an Anti-Spitting Campaign. Let us send you a copy of the manual.

The National Tuberculosis Association and its affiliated branches are now conducting a co-operative campaign with the National Masonic Tuberculosis Association, for the purpose of interesting the members of this influential order in the construction of a sanatoria and in other work against Tuberculosis.

Plans are now fairly well advanced for the meeting of the International Union Against Tuberculosis in Washington. The dates are September 30th, October 1st and 2nd, and those for the National Association Convention which immediately follows, are October 4th to 7th. This occasion will bring together the greatest gathering of authorities on Tuberculosis ever held in the United States, and everyone who can possibly arrange to do so should plan to attend the meetings, as the opportunity will not be offered again soon.

The National Tuberculosis Association has issued a new book entitled "A Health Education Procedure," by Mrs. Kathleen Wilkinson Wooten. It is a companion volume to "Health Training in Schools," but it enters into a field almost untouched by "Health Training," and is the result of eight years experience by Mrs. Wooten in the correlation of health in the class room with every grade and class. It is essentially a book for the teaching and equipment of teachers, written by a trainer of teachers. Let us send you descriptive circular of this volume.

DR. ALFRANIO DE AMARAL

Head of New Antivenin Institute of America.

NEW SNAKE-BITE SERUM LABORATORY.

The Antivenin Institute of America—the only laboratory of its kind on the North American continent—recently began its existence as a department of the Mulford Biological Laboratories at Glenolden, Pa. The director of this new laboratory is Alfrano de Amaral, B. Sc. and L. M. D., D. P. H., of Sao Paulo, Brazil.

Dr. Amaral is in this country on leave of absence from the Brazilian Government's Serum Therapeutic Institute, at Sao Paulo, Brazil, of which he is chief. He is a Professor in Harvard University Institute of Tropical Biology and Medicine. He was invited to come to the United States to study the problem of the increasing number of fatalities from snake-bites. Some fifty deaths from snake-bites last year, in this country alone, have served to focus the attention of health authorities on this growing menace.

Snake-bite poisoning has become a matter of considerable economic importance in certain sections of Central and North America, where many agricultural, engineering and construction workers have been bitten. The Serum Therapeutic Institute of Brazil has done a great work in preparing anti-snake-bite serum, or antivenin, but the demand for these specifics from the North American Continent is greater than they can supply.

The importance which attaches to this new project is everywhere recognized. The Brazilian Government itself has generously granted a two years' extension of Dr. Amaral's leave of absence,

to permit him to organize and establish the Antivenin Institute and to start the routine production of specific antivenins.

Dr. Amaral's first work, in which he is now engaged, is to collect a supply of venom with which to begin the treatment of horses, and also to arrange for the collection of the principal species of poisonous snakes through the south and southwestern United States, also in Mexico, which will serve as the source of further supplies of the poison.

Before the end of the summer, sufficient collections of venomous snakes will have been made, and equipment installed, so that the immunization of horses can be started. It is anticipated that a polyvalent antivenin will first be produced. Later, specific antivenins will be produced for use in certain countries. When a supply of the serum has been worked up, distribution centers will be arranged for in localities where the snake-bite problem presents itself in urgent form, so that the serum may be quickly available to every sufferer.

It is expected that Antivenin Mulford will be ready for distribution about January 1, 1927.

DR. SUN SAVES INDIAN BABIES FROM RICKETS.

Although analysis shows Chippewa Indian babies have a higher percentage of physical defects than white children, and that variation between them in the incidence of rickets among the breast-fed babies is slight, in the case of artificially-fed children rickets occurs with twice the frequency among whites as among Indians. This, it is suggested by the Minnesota State Department of Health, is due to the preventive effect of the greater exposure of Indian babies to direct sunlight. Minnesota's Child Hygiene Division has held during the past two years a series of infant and preschool clinics for children of the Minnesota Chippewa Indians, and two Chippewa Indian nurses have been employed to do maternal and infant hygiene nursing.

CHILDREN'S CLINIC AT NORFOLK, VA.

More than 800 babies under 18 months are under supervision of the Children's Clinic at Norfolk, which in twelve years has developed from an outgrowth of the visiting nurse service of the King's Daughters into an organization housed through the generosity of the local Kiwanis Club in a modern 3-story building and maintaining a staff of 20 visiting physicians, 4 nurses, a social service worker, a dentist, and other special workers who give occasional service. Clinic sessions are held three times a week.

AMERICAN BOARD OF OTOLARYNGOLOGY.

The next examination given by the American Board of Otolaryngology will be held in Denver, Colorado, at the University Hospital, on Monday, September 13, 1926. Application should be made to the Secretary, Dr. H. W. Loeb, 1402 South Grand Boulevard, St. Louis, Missouri.

ANNUAL BEAUMONT MEMORIAL AWARD.

To encourage investigations of alimentary tract function, Dr. Frank Smithies, Chicago, has presented to the School of Medicine of the University of Illinois, bonds in amount sufficient to yield annually, in perpetuity, not less than $100. This fund is known as "The William Beaumont Memorial Fund," and the income therefrom as "The Annual Beaumont Memorial Award."

The award is to be made each year to the research or clinical investigator, who, in the judgment of a Faculty Committee, has contributed the most important work during the year in the field designated.

The first award will be made in 1927. Manuscripts covering investigations do not have to be entered specifically for the award nor is it required that they be submitted to the Faculty Committee. The award is to be granted by the committee after it has considered carefully all investigations published during any year in periodicals throughout the United States. Thus, the award is available to workers in any institution, and is not confined to members of either Faculty or Student Body of the University of Illinois.

UNITED STATES CIVIL SERVICE EXAMINATION.

The United States Civil Service Commission announces the following open competitive examination.

MEDICAL OFFICERS.

Applications for medical officer positions will be rated as received at Washington, D. C., until December 30. The examinations are to fill vacancies in the Indian Service, the Public Health Service, the Coast and Geodetic Survey, the Panama Canal Service, the Veterans' Bureau, and other branches.

The examinations are of five grades: Junior medical officer, assistant medical officer, medical officer, and senior medical officer.

For the Deprtmental Service at Washington, the entrance salaries range from $1,860 a year for the junior grade to $5,200 a year for the senior

grade. Juniors may be promoted to $2,400 and seniors may be promoted to $6,000 after the six months' period of probation. Higher-salaried positions may be filled through promotion in accordance with the civil service rules. Promotion from grade to grade may also be made in accordance with the civil service rules as vacancies occur. For field branches the salaries are approximately the same except that deductions are made where quarters and subsistence are furnished and where part-time duty, only, is required.

Eligibles are needed who are qualified in general medicine and surgery. There is especial need for eligibles qualified in the various specialties. Practically any specialty may be named by the applicant.

Competitors will not be required to report for examination at any place, but will be rated on their education, training, and experience.

Full information and application blanks may be obtained from the United States Civil Service Commission, Washington, D. C., or the secretary of the board of U. S. civil-service examiners at the post office or customhouse in any city.

SPORADIC MENINGOCOCCUS MENINGITIS

Prior to the introduction of serum therapy for sporadic meningococcus meningitis, the mortality of the disease in the first year of life approached 100 per cent. In infants under 1 year of age treated by Stafford McLean and John P. Caffey, New York (Journal A. M. A., July 10, 1926), with serum, recovery occurred in approximately 50 per cent. In children between the ages of 1 and 5 years, 85 per cent recovered. The later growth and development of these children with apparent complete recovery from their acute infection is of interest and of considerable importance. The authors have observed forty-four such cases (excepting two patients who died in the first year after discharge from the hospital) over a period varying from one to ten years, and these form the basis of their report. In ninety-seven patients with meningococcus meningitis treated with serum at the Babies' Hospital in the ten year period from 1916 to 1926, recovery occurrred in fifty-nine, or 61 per cent. These cases were all of the sporadic type. The diagnosis in forty cases was proved by finding meningococci in the cerebrospinal fluid. In the remaining four, the diagnosis was made because of the purulent character of the fluid in which no organisms of any variety could be found. The serum used was polyvalent. It was made in the laboratories of the New York State Department of Health, of the Health Department of New York City, or of the Rockefeller Institute. The patients varied in age from 35 days to 4½ years. Follow-up examinations have been made in forty-four of the fifty-nine cases. Twenty-five of these patients have been observed for three years or longer, and in this group, fifteen have been under observation from five to ten years after treatment. In the total number of cases followed, thirty, or 69 per cent, presented no abnormalities throughout the period of observation. Nine, or 20 per cent, showed serious sequelae, and death occurred in five, or 11 per cent. Four were cases of deaf-mutism, two of hydrocephalus, two of impaired vision, and one of mental deficiency. The time of occurrence of sequelae suggests the value of early treatment in their prevention.

SCARLET FEVER FOLLOWING NOSE AND THROAT OPERATIONS.

Of forty-eight cases classed as surgical scarlet fever at the Durand Hospital, from 1902 to 1926, Beatrice R. Lovett, Chicago (Journal A. M. A., July 10, 1926), states that twenty followed operations, thirteen of which were on the nose and throat. Of these thirteen cases, seven were instances of scarlet fever following operations for cleft palate, two following resections of the nasal septum, and four following tonsillectomies. The intervals between operation and the first symptoms of the disease were: in two cases, two days; in six cases, three days; in two cases, four days, and in three, a few days. All patients had typical scarlet fever, and most of the cases were of the septic type. Complications were unusually numerous, including two instances of bilateral otitis media, two of unilateral otitis media, and two of sinus infections, making a total of six complicated cases in the series of thirteen. One patient, previously operated on for harelip and cleft palate, died following sloughing of the wounds, with profuse purulent discharge and double otitis media. Four nurses caring for this child caught the infection from him. In most of the cleft palate cases, there was sloughing of the tissues and imperfect closure of the defect, so that, although the wounds healed eventually, the operations were not very successful. The occurrence of scarlet fever in children following operations especially on the nose and throat suggests the wisdom of testing and immunizing the patients beforehand. This is particularly advisable preceding cleft palate operations, since most of the patients are at a susceptible age, and if scarlet fever develops, complications are frequent, and the results of the operation are poor.

MISSISSIPPI STATE MEDICAL ASSOCIATION

J. S. Ullman, M. D., Associae Editor.

The Homochitto Medical Society met July 8th, 1926, with Dr. L. H. Lamkin, President, in the chair.

The Committee on Library reported that they had permission from the Board of Education of Natchez to place their books in the Agnes Z. Carpenter Library, and the committee was instructed to arrange ways and means.

A committee consisting of Drs. Philip Beekman, J. S. Ullman, and J. W. D. Dicks was appointed to draw up suitable resolutions on the death of Dr. D. C. Warren, Union Church, Miss.

The report of the committee of the A. M. A. on "Medical Relief in Disaster" was adopted by the Society.

Clinical cases were presented by Drs. Marcus Beekman, E. E. Benoist, Philip Beekman, and J. S. Ullman.

The South Mississippi Medical Society met at Richton in June.

Dr. T. E. Ross, President of the Mississippi State Medical Association, visited the Tri-County Medical Society, the South Mississippi Medical Society, and the Northeast Mississippi Medical Society during the month of June.

He reports each Society as doing fine work. Let the good work go on.

The New Methodist Hospital at Hattiesburg now undergoing construction bids fair to be one of the model hospital buildings of the State when completed.

The foundations are now in and work will be rushed as fast as money and men will permit.

The equipment of the several departments will be the last word in modern science.

Dr. S. S. Turner of Hattiesburg died April 22, 1926.

The North Mississippi Six Counties Medical Society announces the following program for its next meeting in New Albany, Mississippi, July 21, 1926:

"Prevention of Deformities by the General Practitioner"—Dr. Willis C. Campbell, Memphis.

"Mouth Infections"—Dr. John J. Shea, Memphis.

"The Cause of Indigestion"—
Dr. H. W. Hundling, Memphis

"Food in the Prevention of Diseases"—
Dr. Seale Harris, Birmingham

"The Diagnosis of Tuberculosis"—
Dr. Henry Boswell of Mississippi

"Constipation"—Dr. L. Carl Sanders, Memphis

"Cardiac Stimulants, True and False"—
Dr. P. W. Rowland, Oxford

"Diarrhea in Infancy, Its Classification and Treatment"—Dr. E. Clay Mitchell, Memphis

Also papers by Dr. R. C. Bunting, Memphis, and Dr. Whit Rowland, Memphis.

Dr. R. B. Caldwell, of Baldwyn, recently spent several weeks in Tulane University taking a special course on the eye.

The North East Mississippi Medical Society met at Houston on June 15th. Dr. Hugh Gamble read a paper on "Glucose Therapy by Vein." Prominent among the visitors were Dr. T. E. Ross, Sr., of Hattiesburg, President of the Mississippi State Medical Association; Dr. Hardie Hays, of Jackson; Dr. J. B. Black, of Jackson; Dr. Carey Cheek, of Missouri; and Dr. Henry Hill, of Memphis. The next meeting of the Society will be held at Aberdeen in September.

Dr. W. A. Johns, of Corinth, spent several weeks recently in Chicago taking post-graduate work on eye, ear, nose, and throat.

Dr. R. B. Cunningham, of Booneville, was graduated from Tulane in June and is now associated in active practice with Dr. W. H. Sutherland, of Booneville, Miss.

The North East Mississippi Medical Society will have a full day for the December meeting which regularly convenes in Tupelo. The association has invited the Dentists, Pharmacists, and the Graduate Nurses to meet with them and to be represented on the program. Dr. C. C. Bass, Dean of the Medical School of the University of Tulane, has promised to take part in the program.

Dr. Hardie R. Hays has returned from a year's study of epidemiology at Johns Hopkins University and is now actively engaged in epidemiological investigations for the State Board of Health.

The Mississippi State Board of Health resumed the manufacture and free distribution of anti-rabies treatment to all citizens of the State after July 1st.

The Mississippi State Board of Health is preparing a splendid Health Exhibit to be placed on the "Know Mississippi Better" train. This train will leave Jackson on August 17th for a two weeks trip into a number of the Northern and Eastern States.

The Mississippi State Board of Health has two field deputies devoting their full time to investigational and educational work in stimulating the reporting of births and deaths in the State.

The State Hygienic Laboratory is manufacturing and distributing 50,000 ampoules of 1% silver-nitrate solution free to the doctors and midwives of the State annually.

At the regular June Meeting of the State Board of Health, the following applicants were successful in passing the examination and securing licenses to practice medicine:

Temple Ainsworth, M. D.
Stephen Acxel, M. D.
George Benjamin Baylis, Jr., M. D.
Robert Blythe Cunningham, M. D.
Mark Stovall Dougherty, M. D.
Maitland Marion Huffman, M. D.
Louis B. Leggio, M. D.
Singleton McDonald, M. D.
John Ralph Markette, M. D.
Jessie Lawrence Roark, M. D.
Murdock M. Snelling, M. D.
Daniel W. McDonald, M. D.
Hays Newton Holyfields, M. D.
John Richard Edwards, M. D.
Wm. Lauch Hughes, M. D.
Prentiss Edward Smith, M. D.
Gideon Douglass Williams, M. D.
John Wm. Shackelford, M. D.
Talmage Lyles Wilson, M. D.

The following men were granted reciprocal licenses:

Cap James Carter, M. D.
Charles Perry Coogle, M. D.
Gilruth Darrington, M. D.
Theodore Wilbert Kemmerer, M. D.
Morriss DeWitt Kelley, M. D.
Bron-Dee Blackwelder, M. D.
Darel Wesley Whitaker, M. D.
Frank Lee Van Alstine, M. D.
James Ward Jackson, M. D.
Frederick Wm. Haudenschield, M. D.
Will Herbert Strickland, M. D.
Roderick Gambrell Lander, M. D.
Wm. Johnson Cavanaugh, M. D.

Miss Hunt, Superintendent of Nurses at the Natchez Hospital, is now a patient at the State Sanitorium at Magee, Miss.

Dr. E. H. Galloway has been in New York for more than a month taking post-graduate work in "Neuro Surgery" under Dr. LaBott. Mrs. Galloway and her two sons made the trip with Dr. Galloway.

Dr. R. W. Hall expects to spend the month of August in Denver, Colorado.

The Central Medical Society held its regular meeting on July 20. Dr. Ross, President of the State Association, was present.

Dr. G. W. F. Rembert expects to leave in a few days to spend three or four weeks in the East at post-graduate work.

Drs. Neal, McDill, Dobson, and Smithson spent July the fourth and the next few days on the Gulf coast.

Dr. B. A. Shepherd, 71 years of age, died at his home in Lexington, Mississippi, March 24, 1926, of pneumonia. Dr. Shepherd was a member of the Holmes County Medical Society and Mississippi State Medical Association and member of the Southern Medical Association. He was county physician of Holmes county for thirty years and was a member of the State Board of Health during the administration of Gov. Noel.

Holmes County now has an all-time Health Unit with Dr. Blackwelder as county health officer and Miss Inez Breland nurse.

Dr. A. M. Doty is away till October for his health on the Pacific coast.

The Holmes County Medical Society will join with the Central Medical Society within the near future if arrangements can be made to that effect.

Clarke County has secured a Health Unit. Dr. J. T. Googe, of Booneville, formerly with United States Public Health Service, is in charge. Miss Williamson is assisting as public health nurse.

Dr. B. F. Hand, Quitman, is spending a month in Long View, Washngton.

Newton, Neshoba, Winston Tri-County Medical Society recently met at Newton, Mississippi. Drs. Dudley Stenice, T. E. Jarvise, and W. G. Gill were hosts at a luncheon to the Society. The following papers were read:

"Empyema"—Dr. W. G. Gill.

"X-ray for the Country Doctor"—Dr. J. S. Hickman.

A committee of eight members from the Lauderdale Medical Society was present to invite the Newton, Neshoba, Winston Tri-County Medical former Society and the organization to be chartered under the name of Meridian Medical Society.

Dr. R. D. Session, Natchez, Mississippi, is visiting Johns Hopkins and other clinics this month. He is accompanied by his wife and son.

There were more responses to the Editor's reminders this months but there are still fewer than 25% of responses. Let us hope that next month we shall see still more interest being taken in this column.

CORRECTION.

In the July issue of this Journal it was stated that at the meeting of the Central Medical Society, June 15, the paper on the "Cause and Treatment of Epistaxis" was presented by T. E. Ross, of Jackson. This should read: Dr. Ross E. Anderson.

The Editor makes due apologies for this error.

TREATMENT OF IDIOPATHIC PURPURA HEMORRHAGICA.

The treatment advocated by J. W. Sooy and Theodore S. Moise, New Haven, Conn. (Journal A. M. A., July 10, 1926), for idiopathic purpura hemorrhagica is said to be entirely symptomatic in nature, with chief emphasis placed on checking the hemorrhage and replacing the lost platelets. Ten cases have been treated. In two instances, the treatment was used as a method for the preoperative preparation of patients in need of surgical attention; in one instance, for the extraction of several teeth in a woman who had bled profusely for three days after a recent tooth extraction, and in a second patient with a marked hemorrhagic diathesis, on whom a tonsillectomy was indicated. These procedures were followed by a normal convalescence free from bleeding. The method of treatment in these cases has been as follows: On the first day the patient was given two exposures of six minutes each, at a distance of 13 inches, on the entire dorsal and ventral surfaces of the body. The exposures were increased daily by three minutes for five days, after which the exposure may be increased in daily increments of ten minutes. It is rarely necessary to increase the exposure beyond twenty-eight minutes. This procedure gives a massive exposure and may produce a somewhat painful hyperemia. In such cases, the treatment is omitted on the following day. No serious burns have been observed. One case is reported in detail to illustrate the effect of this treatment on the disease. When the patient was first seen, June 4, 1925, the platelet count was 108,000 per cubic millimeter. She was given five daily exposures to the mercury vapor quartz lamp. On the fifth day, the platelet count was 242,000 per cubic millimeter. On account of a severe cold, the patient did not appear for treatments until five days later. At this time, the platelet count had fallen to 152,000, and there was slight epistaxis. Daily treatments were commenced, and after twelve days (June 25) the platelet count had risen to 546,000 per cubic millimeter. The treatments were discontinued about eight months ago, and there have been no further evidences of the disease. The blood platelet count has been maintained at the normal level.

INTERESTING RESULTS FROM USE OF PARATHYROID EXTRACT IN CASE OF OSTEITIS DEFORMANS (PAGET'S DISEASE).

Suggested by the work of Collip on parathyroidectomized dogs in which the administration of extracts of parathyroid glands raised the calcium content of the blood, this substance was employed by Anthony Bassler, New York (Journal A. M. A., July 10, 1926), in a case of osteitis deformans with a happy result. In this case of steadily progressing Paget's disease no treatment was of any value up to the moment the parathyroid was started. Within a short time after its use was established a most marked change for the better occurred. The dose of parathyroid was 1/10 grain (0.006 Gm.) after each meal.

BOOK REVIEWS

The Clinical Interpretation of the Wassermann Reaction: By Robert A. Kilduffe, A. B., A. M., M. D. Philadelphia and New York, Lea & Febiger. 1926.

It is very generally appreciated by practitioners of medicine that their acquaintance with the Wassermann reaction is limited to the report from the laboratory of positive or negative. Too often the report is considered as the last word in the diagnosis of syphilis. It is accepted as the deus ex machina to solve diagnostic difficulties rather than an obiter dictum. The purpose of this book is to aid in doing away with this acceptance of dogma, to elucidate the every day problems and "to furnish in accessible form such succinct information as is necessary for the proper clinical application of the test and the interpretation of its results." How well this is done may be judged from quoting a few of the chapter heads. The basic principles; anticomplimentary reactions; the reaction in primary, secondary, and tertiary, and latent syphilis; the reaction in diseases other than syphilis; false negative reactions, provocative reactions; the reactions in relation to the cure of the disease; the "face-value" of the reaction, are headings which indicate the scope of the book. Under these titles the subject matter is discussed fully and completely, so that it may be understood by practitioners of medicine. This latter point deserves to be accentuated. The book is *not* written for serologists nor for syphilographers.

One criticism may be made of the work, which is written with ease and with a facile pen. It is too modest and unassuming. The very extensive experience of Kilduffe, his researches and his critical knowledge of the Wassermann reaction entitle him to speak with first hand knowledge, and to write positively. On the contrary, the casual reader apparently will get the impression that the book is a compilation of the work of others. Only occasionally does the author mention his own studies. He is too keen a student, has written too widely and studied too deeply not to be recognized, through undue modesty, as one of the great authorities on his subject in this country, in every way qualified to prepare such a monograph.

J. H. MUSSER, M. D.

Thomas Sydenham, Clinician: By David Riesman, M. D. New York, Paul B. Hoeber. 1926.

This small attractive volume, another Hoeber medico-historical publication, is a rather encyclopedic account of the master clinician's life and achievements, facts which should be common knowledge, but unfortunately are not. The title page of the first English edition of Sydenham's works and a complete bibliography lend added interest to the book.

M. MALLOWITZ.

Potter's Compend of Materia Medica, Therapeutics and Prescription Writing. With Special Reference to the Physiological Action of Drugs. Based on the Tenth Revision of the U. S. Pharmacopoeia, Including also Many Unofficial Remedies: By A. D. Bush, B. S., M. D. Ninth edition, revised. Philadelphia, P. Blakiston's Son & Co. 1926.

Dr. Potter's handy little compendium has been brought up to date and now conforms to the tenth revision of the United States Pharmacopoeia. New articles on important drugs have been inserted, and several articles have been rewritten. Obsolete and comparatively unimportant material has been removed and the new edition now presents in brief form the best pharmacologic and therapeutic practice and information. It will continue to serve the purpose for which it was originally written, to aid the busy student and practitioner by furnishing a concise resumé of the relatively more important data bearing on the subject of materia medica.

FRANCIS M. MUNSON, M. D.

Blood Chemistry Colorimetric Methods. For the General Practitioner, with Clinical Comments and Dietary Suggestions: By Willard J. Stone, B.Sc., M. D. Introduction by George Dock, M. D. Second edition, revised. Illustrations. New York, Paul B. Hoeber. 1926.

The fact that a second edition of this book is published only three years after the appearance of the first would indicate that it has proved useful to certain classes of workers. The first eighty-four pages are taken up with directions for the determination of non-protein nitrogen, urea, uric acid, creatinine, creatine, blood sugar chlorides and cholesterol.

The technique recommended in most cases is that of Folin and Wu although methods of other workers are also included. The laboratory directions are clear and well arranged, and in each case are followed by a discussion of the interpretation of the results of the test described, and a brief but up to date biliography. It is to be regretted that the author has seen fit to omit a description of Van Slykes' universally used method for the

determination of the alkali reserve, as well as any theoretical discussion of acid base equilibrium.

Chapter X, entitled "The Dietery Control of Disturbances of Metabolism" would appear rather superfluous in a publication of this type.

The reviewer finds it difficult to decide why the author should feel that directions for the preparation of bran muffins, and discussions of the best methods of insulin dosage and of the anaesthetic to be used in surgical operations on diabetics should be included in a work bearing the title "Blood Chemistry."

W. DENIS.

Lectures on Nutrition. A Series of Lectures Given at the Mayo Foundation and the Universities of Wisconsin, Minnesota, Nebraska, Iowa and Washington (St. Louis): The Mayo Foundation for Medical Education and Research, 1924-1925. Philadelphia, W. B. Saunders Company. 1925.

The contents of this volume includes the following lectures: The Measurement and Significance of Basal Metabolism, by Francis Gano Benedict; Problems of Metabolism, by Graham Lusk; The Proportions in which Protein, Fat, and Carbohydrate are Metabolized in Disease, by Eugene Floyd DuBois; Muscular Activity and Carbohydrate Metabolism, by Archibald Vivian Hill; Our Present Knowledge of the Vitamins, by Elmer Verner McCollum; and The Relations between Fertility and Nutrition, by Herbert McLean Evans. To the reviewer it is not exactly plain to whom the lectures in this book are addressed. The introduction states that they will prove of "interest to the public," but with one or two exceptions unless the reading public has a very lively and timely knowledge of biochemistry, the lectures would convey but very little information that would be of value. There is one unfortunate fact that stands out about the book. It would seem that with two exceptions all the lectures could be read by the average medical man with a great deal of benefit, as facts are brought out and presented so clearly and so free from abstruse terminology that the book is easy to read and may be followed through with a close understanding. On the other hand, two of the lectures are very technical and probably could not be followed satisfactorily by a reader who is not conversant with the more specialized phases of the problems of nutrition.

The Mayo Foundation for Medical Education and Research is to be congratulated upon getting together such a splendid group of authorities to present the subject of nutrition in many of its manifestations in such a manner as is exemplified by the several essays.

J. H. MUSSER, M. D.

Man: His Making and Unmaking. By E. Boyd Barrett, M. A., Ph. D. New York, Thomas Seltzer. 1925.

"All the psychology that most of us are likely to understand is mainly applied common sense. It can be acquired by a careful study of oneself and a sympathetic observation of other people in the light of what that study has revealed about human nature and behavior" (Pym).

Doctor Barrett's book is applied common sense. It is chiefly interesting as the position of an orthodox Roman Catholic and the reactions of modern psychology on the historic faith. The learned professor gives an admirable criticism of the extreme determinists and a vindication of free moral responsibility. The man in the street can get from this book very practical suggestions on mental control. The work contains a wealth of illustrations from the author's laboratory experience. It is neither complete nor profound but is plain and admirable in its criticism of the extreme Freudian and behavioristic schools of psychology. No mention or definition is made of the primary instincts, except the sex instinct. The use of terms frequently is not clear to the lay reader. Libido is used without a clear explanation for the non-technical reader. The process of sublimation is not clearly stated. Sometimes soul is used with its orthodox religious meaning, sometimes as a synonym of the mental process and again as the elan vital. He naively accepts thought transference as an established fact on no more stable or convincing basis than the dictum of the Society for Psychical Research.

FRANCIS M. MUNSON, M. D.

Diseases of the New-Born. A Monographic Handbook: By John A. Foote, M. D., and Collaborators. Philadelphia, J. B. Lippincott Co. 1926.

This book is very attractively gotten up, being printed on heavy gloss paper and well illustrated. It comprises a volume of some 230 pages and there are references at the end of each chapter. The text itself is rather sketchy and brief and could have been increased in value were prescriptions given instead of such advice as the application of bland ointments, light dusting powders and stimulating lotions.

There are many procedures outlined in the chapter on Diagnostic and Therapeutic Measures which are of value and some with which the reviewer must take exception, such as the injection of blood into the superior longitudinal sinus.

The chapter on Habit Formation in the New-Born gives much valuable advice to doting parents on the training of their babies in order to make extinct that worst pest of civilization: the spoilt child.

L. VON MEYSENBUG, M. D.

Psychotherapy. (Harvard Health Talks.) Mental Elements in the Treatment of Disease: By Edward Wyllys Taylor. James Jackson Putnam, Professor of Neurology in Harvard University. Cambridge, Harvard University Press. 1926.

This compact little volume is a professional plea for a scientific and rational consideration by the medical profession of the later investigations in psychology, of the importance of psychoanalysis in therapy, and of a sound course in mental therapy in pre-medical and medical courses. It embodies a brief but engaging review of mental healing from the days of miracles, through the periods of mysticism and charlatanism, Mesmer and hypnotism to the clinical era beginning with Charcot and Janet to the modern analytical methods of Freud and Jung.

Its value is in the reserved, scientific plan and can be recommended for an hour's reading to physicians who have not paid attention to the advances in scientific psychotherapy since we have settled on certain fairly definite laws of mental reactions. A large amount of good psychology is packed in the last fifteen pages.

"* * * The tendency, which has been so marked a feature of medical practice up to this time, to ignore the personality of the patient in the attempt to treat his disease must give place to the broader conception that the physician's duty is to study the reactions of the patient to his disorder with the same painstaking care that he studies the physical conditions of disease. It has been said with considerable justice that medicine has hitherto been concerned with organs, rather than with persons. The time has certainly come, and our knowledge, imperfect as it is, is sufficient to accept the broader implications of treatment which a rational psychotherapy permits. Again I emphasize the word "rational," since we have finally attained knowledge in this difficult but most important field of research, which every well-trained physician must in some degree master, if, as he should, he sets himself the task of treating disease by all legitimate methods.

FRANCIS M. MUNSON, M. D.

Our Present Knowledge of Heredity: A Series of Lectures Given at the Mayo Foundation and the Universities of Wisconsin, Minnesota, Nebraska, Iowa, and Washington (St. Louis). 1923-1924. Illustrated. Philadelphia and London. W. B. Saunders Company. 1925.

The reviewer has nowhere found so much authoritative material on this important subject in so small a compass. The names of the contributers is an indication of the value of the work.

Professor Wm. E. Castle, of Harvard presents the general problem and historical setting in a succint statement of the recognized factors of heredity. Professor Clarence E. McClung, of the University of Pennsylvania, discusses heredity of sex in a carefully balanced lecture, replete with careful observations on the predominant theories of sex differentiation and method of reproduction. The mooted question of the inheritance of acquired characters is handled by Professor John A. Detlefsen of the Wistar Institute of Anatomy and Biology of the University of Pennsylvania. He carefully balances the Weismanian and Lamarckian theories on the inheritance of somatic modifications. He believes that no group of experiments has been carried far enough to convince an impartial biologist that somatic induction is possible. The original contribution of the volume is by Maud Slye, Assistant Professor of Pathology in the University of Chicago. It treats of heredity in relation to cancer. The lecture gives the result of carefully protected experiments for more than twelve years on mice of known ancestry for many generations of selected stock. Some of the charts show fourteen generations absolutely following out the Mendelian law. Her conclusions are as follows: "Inherited predisposition is the basic essential in determining the appearance of cancer." The resistance to cancer appears like a characteristic Mendelian dominant; the susceptibility to cancer is a Medelian recessive. Professor Wells of the University of Chicago reviews all the important experiments from Loeb to Maud Slye on the influence of heredity on the occurrence of cancer. He discounts all mass statistics, from Pearson down, on the transmissibility of human cancer but gives high importance to the mice experiments which show that induced or "grafted" tumors are not inheritable but that spontaneous cancers carry the strain of tendency to the exact place of appearance in a late age. The inheritance of spontaneous tumors in animals seems comparatively certain; our human evidence is inadequate but if the Mendelian law is valid it must rule *over all*

life. The final lecture, on eugenics, is by Professor Michael F. Guyer of the University of Wisconsin. He gives a concise summary of the popular aspects of the science by up-to-date social and psychological statistics.

FRANCIS M. MUNSON, M. D.,

Applied Bio Chemistry, by Withrow Morse, Ph.D., Philadelphia and London, W. B. Saunders Co., 1925.

In this extremely voluminous and extensively illustrated work the author, has according to his statements contained in the preface "written with a view of weaving the woof of bio chemistry into the warp of medicine."

It cannot be denied that this book is built along novel lines; apparently the author is of the opinion that practically all branches of chemistry and of medicine may be included under the heading of bio chemistry, thus Chapter I contains a discussion of the electrical theory of matter, Chapter XIV includes a description of Frohlich syndrome, while on page 398 there appears an illustration of the technique of lumbar puncture.

The book contains the usual chapters on the chemistry of the fats carbohydrates and proteins, on digestion, metabolism, urine, blood, etc.

A novel and to the reviewer's mind distinctly undesirable innovation consists in the use of a system of nomenclature of biochemical substances adopted some years ago by the International Union of pure and applied chemistry. In view of the fact that this system has not as yet been adopted by the American Society of Biological Chemists, or by the American Medical Association, its use in a text book would appear somewhat premature.

Interspersed between the discussion of points of theoretical interest are descriptions of laboratory experiments designed to illustrate the chemistry of biological products, and of analytical methods for the analysis of blood, urine, etc., all written with great elaboration, so that it may truthfully be said that the author leaves nothing to the imagination of the reader; see for example the directions for breaking an egg (page 415) "strike the equator of an egg with a sharp instrument. Into the crack thus formed insert a thumb on each side and carefully open the egg. By transferring the yolk from one half-shell to the other let the white drain into a receptacle."

Many references to the original literature are given in footnotes and in the bibliographies which appear at the end of about every chapter.

In conclusion it may be said that this volume contains an immense amount of information on every phase of bio chemistry, together with a review of many recent investigations, and should be of value to the physician who desires to obtain information regarding modern developments in the science.

W. DENIS.

PUBLICATIONS RECEIVED.

Lea & Febiger, Philadelphia and New York: "Roentgen Interpretation," by George W. Holmes, M. D. and Howard E. Ruggles, M. D. 3rd ed. rev.

J. B. Bailliere & Fils, Paris: "La Grippe," by Pierre Lerebouillet, M. D.

Williams & Wilkins Co., Baltimore: "Pernicious Anemia," by Frank A. Evans, M. D. "Hydrogen In Concentration of the Blood in Health and Disease," by J. Harold Austin and Glenn E. Cullen.

Paul B. Hoeber, New York: "Rational Gland Therapy for Women," by I. Wanless Dickson, M. B., F. R. C. S. "The Peaks of Medical History," by Charles L. Dana, A. M., M. D., LL.D.

F. A. Davis Co., Philadelphia: "Hay-fever and Asthma," by Ray M. Balyeat, A. M., M. D.

E. P. Dutton Co., New York: "Birth Control and the State," by C. P. Blacker, M. C., M. A., M. R. C. S., L. R. C. P.

REPRINTS.

"Formulae for New Culture Media," by M. J. Scott, M. D., F. A. C. S. "Intradural Complications of Aural and Nasal Origin," by Wells P. Eagleton, M. D. "The Purulent Inflammation of Basal Sinuses and Meningeal Cisterna," by Wells P. Eagleton, M. D. "Eye Clinics of India," by Derrick T. Vail, Sr., M. D.